

=> FILE REG

FILE 'REGISTRY' ENTERED AT 15:19:11 ON 09 MAR 2007
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=> DISPLAY HISTORY FULL L1-

FILE 'REGISTRY' ENTERED AT 13:00:37 ON 09 MAR 2007

E ETHYLENE SULFONE/CN
L1 1 SEA "ETHYLENE SULFONE"/CN
E PROPYLENE SULFONE/CN
E PROPYLENESULFONE/CN
E PROPYLENE EPISULFONE/CN

FILE 'LREGISTRY' ENTERED AT 13:04:50 ON 09 MAR 2007

L2 STR
L3 0 SEA SSS SAM L2
L4 1 SEA SSS FUL L2
L5 STR
L6 2 SEA SSS SAM L5
L7 43 SEA SSS FUL L5
SEL L7 43 RN
L8 1 SEA 126-33-0/BI
L9 STR
L10 0 SEA SSS SAM L9
L11 1 SEA SSS FUL L9
L12 STR
L13 0 SEA SSS SAM L12
L14 0 SEA SSS FUL L12

FILE 'REGISTRY' ENTERED AT 13:16:44 ON 09 MAR 2007

L15 0 SEA SSS SAM L12
E C7H14O2S/MF
E C6H12O2S/MF
L16 376 SEA C6H12O2S/MF
L17 7 SEA L16 AND SC6/ES
E THIEPANE,1,1-DIOXIDE/CN
E THIEPANE-1,1-DIOXIDE/CN
E THIEPANE, 1,1-DIOXIDE/CN
L18 1 SEA "THIEPANE, 1,1-DIOXIDE"/CN
L19 1 SEA 5687-92-3
L20 1 SEA 126-33-0
L21 1 SEA 4988-33-4
L22 4 SEA L19 OR L20 OR L21 OR L18

FILE 'LREGISTRY' ENTERED AT 13:25:56 ON 09 MAR 2007

L23 STR

FILE 'REGISTRY' ENTERED AT 13:28:26 ON 09 MAR 2007

L24 SCR 2043 OR 1929 OR 1918 OR 1992 OR 2006 OR 2016 OR 2022
L25 50 SEA SSS SAM L23 NOT L24
L26 6500 SEA SSS FUL L23 NOT L24
SAV L26 WEI086/A
SAV L22 WEI086A/A
E AIBN/CN
L27 1 SEA AIBN/CN

FILE 'HCAPLUS' ENTERED AT 14:44:56 ON 09 MAR 2007

L28 12959 SEA PARK Y?/AU
L29 1674 SEA JUNG W?/AU
L30 7955 SEA KIM G?/AU
L31 2280 SEA JUNG C?/AU
L32 1 SEA L28 AND L29 AND L30 AND L31
SEL RN

FILE 'REGISTRY' ENTERED AT 14:46:52 ON 09 MAR 2007

L33 54 SEA (10377-51-2/BI OR 10411-26-4/BI OR 105-58-8/BI OR
L34 11 SEA L33 AND ?PEROX?/CNS
L35 26 SEA L33 AND C H O/ELF AND 3/ELC.SUB
L36 15 SEA L35 NOT L34

FILE 'HCA' ENTERED AT 14:52:38 ON 09 MAR 2007

L37 233708 SEA (BATTERY OR BATTERIES OR (ELECTROCHEM? OR ELECTROLY?
OR GALVANI? OR WET OR DRY OR PRIMARY OR SECONDARY) (2A) (CE
LL OR CELLS) OR WETCELL? OR DRYCELL?)/BI,AB
L38 10444 SEA L26
L39 4292 SEA L22
L40 19204 SEA L27 OR AIBN#
L41 14017 SEA L34
L42 138 SEA L37 AND L38
L43 5 SEA L42 AND L41
L44 406 SEA L37 AND L39
L45 6 SEA L44 AND L41
L46 3 SEA L42 AND L40
L47 3 SEA L44 AND L40

FILE 'REGISTRY' ENTERED AT 15:02:16 ON 09 MAR 2007

L48 0 SEA L33 AND PMS/CI

FILE 'HCA' ENTERED AT 15:03:09 ON 09 MAR 2007

L49 QUE ?ACRYLIC? OR ?ACRYLAT?

FILE 'REGISTRY' ENTERED AT 15:03:16 ON 09 MAR 2007

ACT POLYOLS/A

L50 (16)SEA (GLYCEROL OR DIGLYCEROL OR TRIGLYCEROL OR TETRAGLYCEROL OR PENTAGLYCEROL OR HEXAGLYCEROL OR TRIMETHYLOLMETHANE OR TRIMETHYLOLETHANE OR TRIMETHYLOLPROPANE OR PENTAERYTHRITOL OR DIPENTAERYTHRITOL OR TRIPENTAERYTHRITOL OR SORBITOL OR INOSITOL)/CN

L51 (1)SEA 7426-71-3
L52 17 SEA L51 OR L50

L53 2 SEA L33 AND L52

FILE 'HCA' ENTERED AT 15:04:10 ON 09 MAR 2007

L54 169858 SEA L52 OR POLYOL# OR POLYALC# OR POLYALCOHOL## OR POLYHYDRIC?

L55 478282 SEA ELECTROLY?

L56 7 SEA L55 AND (L38 OR L39) AND L41

L57 4 SEA L55 AND (L38 OR L39) AND L40

L58 5 SEA (L37 OR L55) AND (L38 OR L39) AND (L40 OR L41) AND L49

L59 4 SEA (L37 OR L55) AND (L38 OR L39) AND (L40 OR L41) AND L54

L60 3 SEA L58 AND L59

FILE 'REGISTRY' ENTERED AT 15:10:01 ON 09 MAR 2007

L61 470902 SEA (C(L)H(L)O)/ELS (L) 3/ELC.SUB AND 4/O

L62 4237 SEA L61 AND ?PEROX?/CNS

FILE 'HCA' ENTERED AT 15:11:18 ON 09 MAR 2007

L63 449025 SEA L62 OR ?PEROXID? OR ?PEROXY?

L64 24839 SEA L62

L65 6 SEA (L37 OR L55) AND (L38 OR L39) AND L40

L66 76508 SEA AZO OR AZOS

L67 4 SEA (L37 OR L55) AND (L38 OR L39) AND L66

L68 28 SEA (L37 OR L55) AND (L38 OR L39) AND L63

L69 8 SEA (L37 OR L55) AND (L38 OR L39) AND L64

L70 8 SEA L43 OR L45 OR L56

L71 6 SEA L46 OR L47 OR L57

L72 6 SEA L58 OR L59 OR L60

L73 12 SEA L65 OR L67 OR L69

L74 20 SEA L68 NOT L73

L75 13 SEA 1840-2002/PY,PRY AND L74

=> FILE HCA

FILE 'HCA' ENTERED AT 15:20:15 ON 09 MAR 2007

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=> D L73 1-12 CBIB ABS HITSTR HITIND

L73 ANSWER 1 OF 12 HCA COPYRIGHT 2007 ACS on STN

146:145946 **Electrolyte** for lithium secondary battery

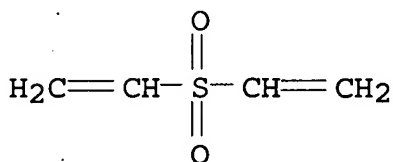
. Kim, Cheonsoo (Samsung Sdi Co., Ltd., S. Korea). U.S. Pat. Appl.
Publ. US 2007009806 A1 20070111, 11pp. (English). CODEN: USXXCO.
APPLICATION: US 2006-481911 20060707. PRIORITY: KR 2005-61409
20050707.

AB The invention concerns an **electrolyte** for a lithium
secondary battery and a lithium secondary battery
having the **electrolyte**, the **electrolyte**
including a lithium salt; a non-aq. org. solvent including
 γ -butyrolactone-; and a succinic anhydride.

IT 77-77-0, Divinyl sulfone
(**electrolyte** for lithium secondary battery)

RN 77-77-0 HCA

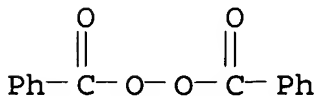
CN Ethene, 1,1'-sulfonylbis- (9CI) (CA INDEX NAME)



IT 94-36-0, Dibenzoyl peroxide, reactions 105-74-8,
Dilauroyl peroxide 110-22-5, Diacetyl peroxide
2372-21-6, tert-Butyl peroxy isopropyl carbonate
3851-87-4, Bis(3,5,5-trimethylhexanoyl) peroxide
34443-12-4, tert-Butyl peroxy-2-ethylhexyl carbonate
(**electrolyte** for lithium secondary battery)

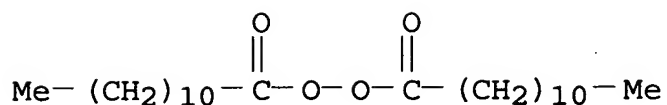
RN 94-36-0 HCA

CN Peroxide, dibenzoyl (9CI) (CA INDEX NAME)



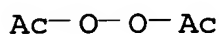
RN 105-74-8 HCA

CN Peroxide, bis(1-oxododecyl) (9CI) (CA INDEX NAME)

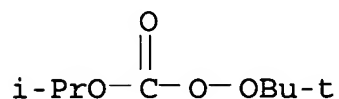


RN 110-22-5 HCA

CN Peroxide, diacetyl (9CI) (CA INDEX NAME)

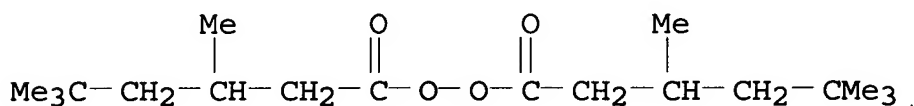


RN 2372-21-6 HCA

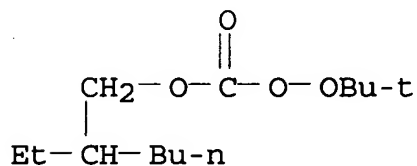
CN Carbonoperoxoic acid, OO-(1,1-dimethylethyl) O-(1-methylethyl) ester
(9CI) (CA INDEX NAME)

RN 3851-87-4 HCA

CN Peroxide, bis(3,5,5-trimethyl-1-oxohexyl) (9CI) (CA INDEX NAME)



RN 34443-12-4 HCA

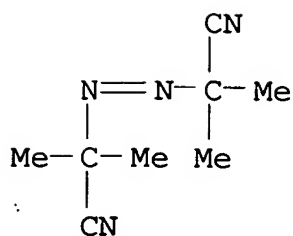
CN Carbonoperoxoic acid, OO-(1,1-dimethylethyl) O-(2-ethylhexyl) ester
(9CI) (CA INDEX NAME)

IT 78-67-1, 2,2'-Azo-bis(isobutyronitrile)

(electrolyte for lithium secondary battery)

RN 78-67-1 HCA

CN Propanenitrile, 2,2'-azobis[2-methyl- (9CI) (CA INDEX NAME)



- INCL 429329000; 429332000; 429200000
- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
- ST **electrolyte lithium secondary battery**
- IT **Battery electrolytes**
 (electrolyte for lithium secondary battery)
- IT Aromatic hydrocarbons, uses
 Esters, uses
 Ethers, uses
 Ketones, uses
 (electrolyte for lithium secondary battery)
- IT Secondary batteries
 (lithium; **electrolyte for lithium secondary battery**)
- IT 77-77-0, Divinyl sulfone 96-48-0, γ -Butyrolactone
 108-30-5, Succinic anhydride, uses 872-36-6, Vinylene carbonate
 3741-38-6, Ethylene sulfite 25721-76-0, Poly(ethylene glycol)dimethacrylate 26570-48-9, Poly(ethylene glycol)diacrylate 49717-87-5, uses 919110-87-5
 (electrolyte for lithium secondary battery)
- IT 94-36-0, Dibenzoyl peroxide, reactions 105-64-6, Di-isopropyl peroxydicarbonate 105-74-8, Dilauroyl peroxide 107-71-1, tert-Butyl peroxy acetate 109-13-7, tert-Butyl peroxy isobutyrate 110-22-5, Diacetyl peroxide 614-45-9, tert-Butyl peroxy benzoate 686-31-7, tert-Amylperoxy 2-ethyl hexanoate 927-07-1, tert-Butyl peroxy pivalate 2372-21-6, tert-Butyl peroxy isopropyl carbonate 3006-82-4, tert-Butylperoxy-2-ethyl hexanoate 3851-87-4, Bis(3,5,5-trimethylhexanoyl) peroxide 13122-18-4 15518-51-1, Diethylene glycol bis(tert-butyl peroxy carbonate) 15520-11-3, Bis(4-tert-butylcyclohexyl) peroxydicarbonate 16111-62-9, Di-2-ethylhexyl peroxy dicarbonate 26748-38-9, tert-Butyl peroxy neoheptanoate 29240-17-3, tert-Amyl peroxy pivalate 34443-12-4, tert-Butyl peroxy-2-ethylhexyl carbonate 36536-42-2 51938-28-4, tert-Hexyl peroxy pivalate 52238-68-3 68860-54-8 919110-90-0
 (electrolyte for lithium secondary battery)
- IT 71-43-2, Benzene, uses 78-67-1, 2,2'-Azo-bis(isobutyronitrile) 96-49-1, Ethylene carbonate 105-58-8,

Diethyl carbonate 108-32-7, Propylene carbonate 108-67-8, Mesitylene, uses 108-86-1, Bromobenzene, uses 108-88-3, Toluene, uses 108-90-7, Chlorobenzene, uses 462-06-6, Fluorobenzene 463-79-6D, Carbonic acid, ester 616-38-6, Dimethyl carbonate 623-53-0, EthylMethyl carbonate 623-96-1, Dipropyl carbonate 1330-20-7, Xylene, uses 2094-98-6 4419-11-8, 2,2'-Azo-bis(2,4-dimethyl valeronitrile) 4437-70-1, 2,3-Butylene carbonate 4437-85-8, 1,2-Butylene carbonate 4437-86-9 7447-41-8, Lithium chloride, uses 7791-03-9, Lithium perchlorate 10377-51-2, Lithium iodide 14024-11-4, Lithium tetrachloroaluminate 14283-07-9, Lithium tetrafluoroborate 18424-17-4, Lithium hexafluoroantimonate 21324-40-3, Lithium hexafluorophosphate 29935-35-1, Lithium hexafluoroarsenate 33454-82-9, Lithium triflate 35363-40-7, Ethylpropyl carbonate 37220-89-6, Aluminum lithium oxide 56525-42-9, Methylpropyl carbonate 89489-56-5, 1,2-Pentylene carbonate 90076-65-6 114435-02-8, Fluoroethylene carbonate 131651-65-5

(electrolyte for lithium secondary battery)

L73 ANSWER 2 OF 12 HCA COPYRIGHT 2007 ACS on STN

142:264348 **Electrolyte** for rechargeable lithium

battery. Lee, Yong-Beom; Song, Eui-Hwan; Kim, Kwang-Sup; Earmme, Tae-Shik; Kim, You-Mee (Samsung SDI Co., Ltd., S. Korea). Eur. Pat. Appl. EP 1508934 A1 20050223, 32 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR. (English). CODEN: EPXXDW. APPLICATION: EP 2004-90320 20040819. PRIORITY: KR 2003-57716 20030820; KR 2004-5874 20040129.

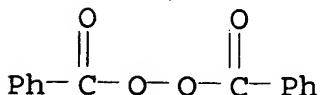
AB Disclosed is an **electrolyte** for a rechargeable lithium **battery**, including a mixt. of org. solvents including a cyclic solvent and a nitrile-based solvent represented by the formula R-C.tplbond.N (R is from C1-10 aliph. hydrocarbons, C1-10 halogenated aliph. hydrocarbons, C6-10 arom. hydrocarbons, and C6-10 halogenated arom. hydrocarbons) and a lithium salt.

IT 94-36-0, Dibenzoyl peroxide, processes 105-74-8, Dilauroyl peroxide 110-22-5, Diacetyl peroxide 2372-21-6, tert-Butyl peroxy isopropyl carbonate 3851-87-4, Bis(3,5,5-trimethyl)hexanoyl peroxide 34443-12-4, tert-Butyl peroxy 2-ethylhexyl carbonate

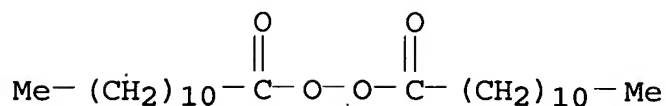
(electrolyte for rechargeable lithium **battery**)

RN 94-36-0 HCA

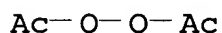
CN Peroxide, dibenzoyl (9CI) (CA INDEX NAME)



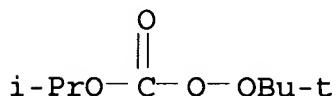
RN 105-74-8 HCA
 CN Peroxide, bis(1-oxododecyl) (9CI) (CA INDEX NAME)



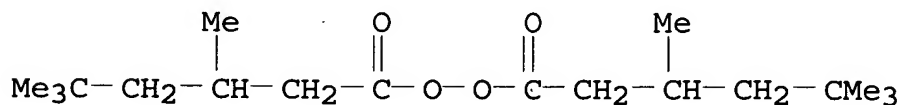
RN 110-22-5 HCA
 CN Peroxide, diacetyl (9CI) (CA INDEX NAME)



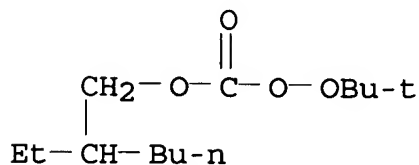
RN 2372-21-6 HCA
 CN Carbonoperoxoic acid, OO-(1,1-dimethylethyl) O-(1-methylethyl) ester (9CI) (CA INDEX NAME)



RN 3851-87-4 HCA
 CN Peroxide, bis(3,5,5-trimethyl-1-oxohexyl) (9CI) (CA INDEX NAME)

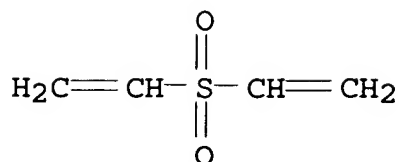


RN 34443-12-4 HCA
 CN Carbonoperoxoic acid, OO-(1,1-dimethylethyl) O-(2-ethylhexyl) ester (9CI) (CA INDEX NAME)



IT 77-77-0, DiVinyl sulfone
 (electrolyte for rechargeable lithium battery
)

RN 77-77-0 HCA
 CN Ethene, 1,1'-sulfonylbis- (9CI) (CA INDEX NAME)



- IC ICM H01M010-40
- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
- ST **electrolyte** rechargeable lithium **battery**
- IT Nitriles, uses
(aliph., C1-10; **electrolyte** for rechargeable lithium **battery**)
- IT Nitriles, uses
(arom., C6-10; **electrolyte** for rechargeable lithium **battery**)
- IT **Battery electrolytes**
(**electrolyte** for rechargeable lithium **battery**)
- IT Lactones
(**electrolyte** for rechargeable lithium **battery**)
- IT Secondary **batteries**
(lithium; **electrolyte** for rechargeable lithium **battery**)
- IT Peroxides, uses
(org.; **electrolyte** for rechargeable lithium **battery**)
- IT 94-36-0, Dibenzoyl peroxide, processes 105-74-8,
Dilauroyl peroxide 107-71-1, tert-Butylperoxy acetate 109-13-7,
tert-Butylperoxyisobutyrate 110-22-5, Diacetyl peroxide
614-45-9, tert-Butylperoxy benzoate 686-31-7, tert-Amylperoxy
2-ethylhexanoate 927-07-1, tert-Butyl peroxy pivalate
2372-21-6, tert-Butyl peroxy isopropyl carbonate
3006-82-4, tert-Butyl peroxy-2-ethyl hexanoate 3851-87-4,
Bis(3,5,5-trimethyl)hexanoyl peroxide 4419-11-8,
2,2'-Azobis(2,4-dimethylvaleronitrile) 13122-18-4,
tert-Butylperoxy 3,5,5-trimethylhexanoate 15518-51-1, Diethylene
glycol bis(tert-butylperoxycarbonate) 15520-11-3,
Di(4-tert-butylcyclohexyl)peroxydicarbonate 25551-14-8
26748-38-9, tert-Butyl peroxy neoheptanoate 26748-41-4, tert-Butyl
peroxy neodecanoate 29240-17-3, tert-Amyl peroxy pivalate
34443-12-4, tert-Butyl peroxy 2-ethylhexyl carbonate
36536-42-2, 1,6-Hexanediol bis(tert-butyl peroxycarbonate)
51240-95-0, 1,1,3,3-Tetramethylbutyl peroxy neodecanoate
51938-28-4, tert-Hexylperoxy pivalate 52238-68-3,

Bis(3-methoxybutyl) peroxydicarbonate 68860-54-8 96989-15-0
845717-44-4

(electrolyte for rechargeable lithium battery
)

IT 79-20-9, Methyl acetate 96-48-0, γ -Butyrolactone 96-49-1,
Ethylene carbonate 105-58-8, Diethyl carbonate 106-70-7, Methyl
hexanoate 107-12-0, Propionitrile 107-31-3, Methyl formate
108-29-2, γ -Valerolactone 108-32-7, Propylene carbonate
109-74-0, Butyronitrile 110-59-8, Valeronitrile 124-12-9,
Caprylonitrile 140-29-4, Phenylacetoneitrile 141-78-6, Ethyl
acetate, uses 326-62-5, 2-Fluorophenylacetoneitrile 394-47-8,
2-Fluorobenzonitrile 459-22-3, 4-Fluorophenylacetoneitrile
502-44-3, ϵ -Caprolactone 542-28-9, δ -Valerolactone
542-52-9, Dibutyl carbonate 616-38-6, Dimethyl carbonate
623-53-0, Ethyl methyl carbonate 623-96-1, Dipropyl carbonate
629-08-3, Heptanenitrile 630-18-2, tert-Butyl cyanide 695-06-7,
 γ -Caprolactone 766-05-2, Cyclohexanecarbonitrile
1194-02-1, 4-Fluorobenzonitrile 4254-02-8,
Cyclopentanecarbonitrile 4437-85-8, Butylene carbonate
7439-93-2D, Lithium, salt 7791-03-9, Lithium perchlorate
12190-79-3, Cobalt lithium oxide (CoLiO₂) 14024-11-4, Lithium
tetrachloroaluminate 14283-07-9, Lithium tetrafluoroborate
18424-17-4, Lithium hexafluoroantimonate 21324-40-3, Lithium
hexafluorophosphate 29935-35-1, Lithium hexafluoroarsenate
33454-82-9, Lithium triflate 57381-51-8, 4-Chloro-2-fluoro-
benzonitrile 60702-69-4, 2-Chloro-4-fluoro-benzonitrile
90076-65-6 90240-74-7 127813-79-0 132843-44-8 179802-95-0,
Cobalt lithium manganese nickel oxide (Co_{0.1}LiMn_{0.1}Ni_{0.802})
845717-45-5

(electrolyte for rechargeable lithium battery
)

IT 75-05-8, Acetonitrile, uses 77-77-0, DiVinyl sulfone
105-64-6, Di-isopropylperoxydicarbonate 628-73-9, Capronitrile
872-36-6, Vinylene carbonate 3741-38-6, Ethylene sulfite
16111-62-9, Bis(2-ethylhexyl) peroxydicarbonate 22537-94-6
71331-99-2, Bis(4-tert-butylcyclohexyl)peroxycarbonate
114435-02-8, Fluoroethylene carbonate

(electrolyte for rechargeable lithium battery
)

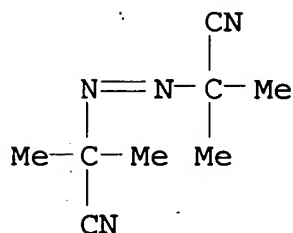
L73 ANSWER 3 OF 12 HCA COPYRIGHT 2007 ACS on STN

140:394771 Study on the wastewater treated by the iron chip micro-
electrolysis. Ma, Qian; Ye, Shaodan; Li, Yijiu; Liu, Yafei;
Ni, Yaming (School of Life Science and Technology Analysis and
Research Center, Tongji University, Shanghai, 200092, Peop. Rep.
China). Gongye Shuichuli, 23(5), 38-41 (Chinese) 2003. CODEN:
GOSHFA. ISSN: 1005-829X. Publisher: Gongye Shuichuli Zazhishe.

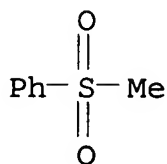
AB The photoresist-contg. wastewater was treated by the Fe chip micro-

electrolysis method. The inorg. and org. pollutants in the wastewater after the treatment were analyzed by ICP-AES and GC-MS. There were several kinds of mechanisms for the removal or degrdn. of contaminants, such as the electrochem. corrosion, activated C absorption, coagulation sedimentation of Fe³⁺ and Fe²⁺, the redn. of Fe, etc. The removal efficiency for heavy metals such as Cu, Zn, V, and Sn was 100, 47, 100, and 98.1%, resp. The removal efficiency for phthalic anhydride, homologs of polypropylene glycol, 2-butenic acid, and benzoic acid were 100, 29.9, 27.7, and 56.5%, resp. The degradability for nitrobenzene and 2-chlorobutenic acid was all 100%.

- IT 78-67-1, Azobis(isobutyronitrile) 3112-85-4,
Methyl phenyl sulfone
(iron chip micro-electrolysis of photoresist-contg.
wastewater)
- RN 78-67-1 HCA
- CN Propanenitrile, 2,2'-azobis[2-methyl- (9CI) (CA INDEX NAME)



- RN 3112-85-4 HCA
- CN Benzene, (methylsulfonyl)- (CA INDEX NAME)



- CC 60-2 (Waste Treatment and Disposal)
- IT Wastewater treatment
(absorption; iron chip micro-electrolysis of
photoresist-contg. wastewater)
- IT Wastewater treatment
(coagulation; iron chip micro-electrolysis of
photoresist-contg. wastewater)
- IT Wastewater treatment
(electrochem.; iron chip micro-electrolysis of
photoresist-contg. wastewater)
- IT Heavy metals

Polyoxyalkylenes, processes

(iron chip micro-electrolysis of photoresist-contg. wastewater)

IT Wastewater treatment

(settling; iron chip micro-electrolysis of photoresist-contg. wastewater)

IT 7439-89-6, Iron, uses

(iron chip micro-electrolysis of photoresist-contg. wastewater)

IT 65-85-0, Benzoic acid, processes 70-55-3, 4-

Methylbenzenesulfonamide 78-67-1, Azobis(isobutyronitrile)

85-44-9, Phthalic anhydride 98-95-3, Nitrobenzene, processes

100-52-7, Benzaldehyde, processes 104-76-7, 2-Ethyl-1-hexanol

119-61-9, Benzophenone, processes 121-69-7, N,N-Dimethylaniline,

processes 123-86-4, Butyl acetate 600-13-5 619-56-7,

4-Chlorobenzamide 822-06-0, Hexamethylene diisocyanate 930-68-7,

2-Cyclohexenone 3112-85-4, Methyl phenyl sulfone

3724-65-0, 2-Butenoic acid 7440-31-5, Tin, processes 7440-50-8,

Copper, processes 7440-62-2, Vanadium, processes 7440-66-6,

Zinc, processes 13423-22-8, 3,3,4,4-Tetramethyl-2-azetidinone

25322-69-4, Polypropylene glycol 29911-27-1

(iron chip micro-electrolysis of photoresist-contg. wastewater)

L73 ANSWER 4 OF 12 HCA COPYRIGHT 2007 ACS on STN

140:256340 Anodes for lithium **battery**. Kim, Yong-tae; Choi, Su-suk; Choi, Yun-suk; Lee, Kyoung-hee (Samsung Sdi Co., Ltd., S. Korea). U.S. Pat. Appl. Publ. US 2004058232 A1 20040325, 10 pp. (English). CODEN: USXXCO. APPLICATION: US 2003-664157 20030917. PRIORITY: KR 2002-57577 20020923.

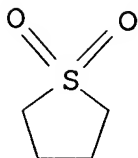
AB A lithium neg. electrode for a lithium **battery** has good cycle life and capacity characteristics. The lithium neg. electrode comprises a lithium metal layer and a protective layer present on the lithium metal layer, where the protective layer includes an organosulfur compd. An organosulfur compd. having a thiol terminal group is preferred since such a compd. can form a complex with lithium metal to enable coating to be carried out easily. The organosulfur compd. has a large no. of S or N elements having high electronegativity to form a complex with lithium ions, so it renders lithium ions to be deposited relatively evenly on the lithium metal surface, reducing dendrite formation.

IT 126-33-0, Sulfolane

(anodes for lithium **battery**)

RN 126-33-0 HCA

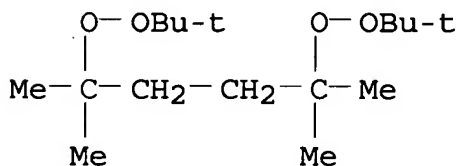
CN Thiophene, tetrahydro-, 1,1-dioxide (CA INDEX NAME)



IT 78-63-7, 2,5-Dimethyl-2,5-di-(tert-butylperoxy)hexane
 78-67-1, Azobisisobutyronitrile 94-36-0, Dibenzoyl
 peroxide, uses 105-74-8, Dilauroyl peroxide
 762-12-9, Didecanoyl peroxide 2167-23-9,
 2,2-Di-(tert-butylperoxy)butane 3025-88-5,
 2,5-Dihydroperoxy-2,5-dimethylhexane 15667-10-4,
 1,1-Di-(tert-amylperoxy)cyclohexane 95732-35-7
 (anodes for lithium battery)

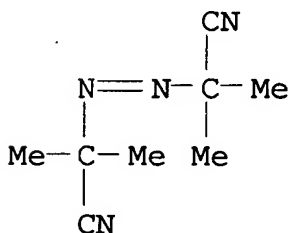
RN 78-63-7 HCA

CN Peroxide, (1,1,4,4-tetramethyl-1,4-butanediyl)bis[(1,1-dimethylethyl) (9CI) (CA INDEX NAME)



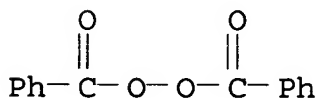
RN 78-67-1 HCA

CN Propanenitrile, 2,2'-azobis[2-methyl- (9CI) (CA INDEX NAME)



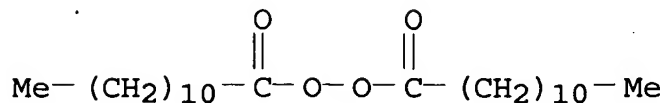
RN 94-36-0 HCA

CN Peroxide, dibenzoyl (9CI) (CA INDEX NAME)



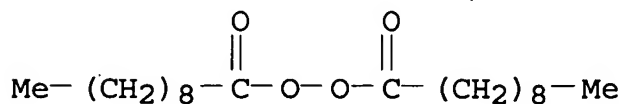
RN 105-74-8 HCA

CN Peroxide, bis(1-oxododecyl) (9CI) (CA INDEX NAME)



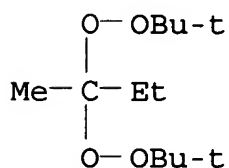
RN 762-12-9 HCA

CN Peroxide, bis(1-oxodecyl) (9CI) (CA INDEX NAME)



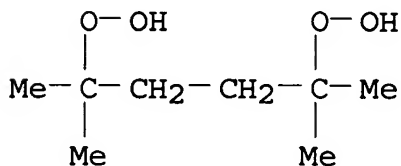
RN 2167-23-9 HCA

CN Peroxide, (1-methylpropylidene)bis[(1,1-dimethylethyl) (9CI) (CA INDEX NAME)]



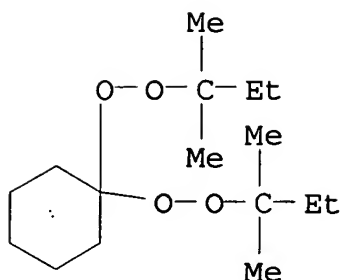
RN 3025-88-5 HCA

CN Hydroperoxide, (1,1,4,4-tetramethyl-1,4-butanediyl)bis- (9CI) (CA INDEX NAME)



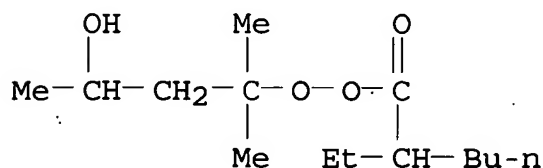
RN 15667-10-4 HCA

CN Peroxide, cyclohexylidenebis[(1,1-dimethylpropyl) (9CI) (CA INDEX NAME)]



RN 95732-35-7 HCA

CN Hexaneperoxoic acid, 2-ethyl-, 3-hydroxy-1,1-dimethylbutyl ester
(CA INDEX NAME)



IC ICM H01M002-16

ICS H01M004-66; H01M004-40

INCL 429137000; 429246000; 429245000; 429212000; 429231950

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38

ST anode lithium **battery**

IT Chalcogenides

Oxides (inorganic), uses

(Li-contg.; anodes for lithium **battery**)

IT Peroxides, uses

(acyl; anodes for lithium **battery**)

IT Hydroperoxides

(alkyl, tertiary; anodes for lithium **battery**)

IT Peroxides, uses

(alkyl; anodes for lithium **battery**)

IT **Battery** anodes

Coating materials

Conducting polymers

(anodes for lithium **battery**)

IT Acrylic polymers, uses

Polyanilines

Polyoxyalkylenes, uses

(anodes for lithium **battery**)

IT Amino acids, uses

Halogens

Lewis acids

- Rare earth chlorides
 Sulfonic acids, uses
 Transition metal compounds
 (dopant; anodes for lithium battery)
- IT Primary batteries
 Secondary batteries
 (lithium; anodes for lithium battery)
- IT Esters, uses
 Ketals
 (peroxy; anodes for lithium battery)
- IT Crown ethers
 Polybenzimidazoles
 Polyquinolines
 Polyquinoxalines
 (thiophenes, polymers; anodes for lithium battery)
- IT 110-71-4 111-96-6, Diglyme 126-33-0, Sulfolane
 646-06-0, 1,3-Dioxolane 7439-93-2, Lithium, uses 7704-34-9,
 Sulfur, uses
 (anodes for lithium battery)
- IT 67-63-0, Isopropyl alcohol, uses 75-91-2, tert-Butyl hydroperoxide
 78-63-7, 2,5-Dimethyl-2,5-di-(tert-butylperoxy)hexane
 78-67-1, Azobisisobutyronitrile 80-15-9, Cumene
 hydroperoxide 80-43-3, Dicumyl peroxide 94-36-0,
 Dibenzoyl peroxide, uses 105-74-8, Dilauroyl peroxide
 110-05-4, Di-tert-butyl peroxide 123-23-9, Succinic acid peroxide
 762-12-9, Didecanoyl peroxide 927-07-1,
 tert-Butylperoxypivalate 2167-23-9, 2,2-Di-(tert-
 butylperoxy)butane 3025-88-5, 2,5-Dihydroperoxy-2,5-
 dimethylhexane 4511-39-1, tert-Amylperoxybenzoate
 15667-10-4, 1,1-Di-(tert-amylperoxy)cyclohexane
 16066-38-9, Di(n-propyl)peroxy dicarbonate 16111-62-9,
 Di(2-ethylhexyl)peroxy dicarbonate 19910-65-7, Di(sec-butyl)peroxy
 dicarbonate 24937-05-1, Poly(ethylenediacrylate) 24938-43-0,
 Poly(β -propiolactone) 24969-06-0, Polyepichlorohydrin
 25190-62-9, Poly(p-phenylene) 25233-30-1, Polyaniline
 25233-30-1D, Polyaniline, sulfonated 25233-34-5, Polythiophene
 25233-34-5D, Polythiophene, derivs. 25322-68-3, Peo 25322-69-4,
 Polypropylene oxide 25667-11-2, Poly(ethylenesuccinate)
 25721-76-0, Polyethylene glycol dimethacrylate 25852-49-7,
 Polypropylene glycol dimethacrylate 26570-48-9, Poly(ethylene
 glycol diacrylate) 26748-47-0, α -Cumylperoxyneodecanoate
 34099-48-4, Peroxydicarbonate 52496-08-9,
 Poly(propyleneglycoldiacrylate) 55794-20-2, Ethyl
 3,3-di-(tert-butylperoxy)butyrate 95732-35-7 97332-10-0,
 Poly(N-propylaziridine) 139096-57-4, Isoquinoline homopolymer
 172973-34-1
 (anodes for lithium battery)
- IT 865-44-1, Iodine trichloride 1493-13-6, Triflic acid 7446-11-9,

Sulfur trioxide, uses 7550-45-0, Titanium chloride (TiCl₄) (T-4)-, uses 7553-56-2, Iodine, uses 7601-90-3, Perchloric acid, uses 7637-07-2, uses 7647-01-0, Hydrochloric acid, uses 7647-19-0, Phosphorus pentafluoride 7664-39-3, Hydrofluoric acid, uses 7664-93-9, Sulfuric acid, uses 7697-37-2, Nitric acid, uses 7705-08-0, Ferric chloride, uses 7721-01-9, Tantalum chloride (TaCl₅) 7726-95-6, Bromine, uses 7782-44-7, Oxygen, uses 7782-50-5, Chlorine, uses 7783-68-8, Niobium fluoride nbf5 7783-70-2, Antimony pentafluoride 7783-81-5 7783-82-6 7783-93-9, Silver perchlorate 7784-36-3, Arsenic pentafluoride 7789-21-1, Fluorosulfonic acid 7789-33-5, Iodine monobromide 7790-94-5, Chlorosulfonic acid 7790-99-0, Iodine monochloride 10026-11-6 10026-12-7, Niobium chloride (NbCl₅) 10277-43-7, Lanthanum nitrate hexahydrate 10294-33-4, Boron tribromide 10294-34-5 13283-01-7 13499-05-3 13709-32-5, Bis(fluorosulfonyl)peroxide 13774-85-1 13819-84-6, Molybdenum fluoride mof5 13870-10-5, Iron chloride oxide feocl 13873-84-2, Iodine monofluoride 14635-75-7, Nitrosyl tetrafluoroborate 14797-73-0, Perchlorate 14874-70-5, Tetrafluoroborate 16871-80-0, Nitrosyl hexachloroantimonate 16887-00-6, Chloride, uses 16919-18-9, Hexafluorophosphate 16941-92-7, Hexachloroiridic acid 16973-45-8, Hexafluoroarsenate 17111-95-4 17856-92-7 20461-54-5, Iodide, uses 24959-67-9, Bromide, uses 25321-43-1, Octylbenzenesulfonic acid 27176-87-0, Dodecylbenzene sulfonic acid

(dopant; anodes for lithium battery)

IT 540-63-6, 1,2-Ethanedithiol 1072-71-5, 2,5-Dimercapto-1,3,4-thiadiazole 2001-93-6, 2,4-Dimercaptopyrimidine 2150-02-9, Bis(2-mercaptoethyl)ether 3570-55-6, Bis(2-mercaptoethyl)sulfide 9002-98-6 9002-98-6D, derivs. 37306-44-8D, Triazole, mercapto derivs 131538-50-6 135886-78-1 135886-79-2

(protective coating; anodes for lithium battery)

IT 7704-34-9D, Sulfur, organosulfur compd.

(protective layer; anodes for lithium battery)

IT 273-77-8, 1,2,3-Benzothiadiazole 612-79-3, 6,6'-Biquinoline 25013-01-8, Polypyridine 25013-01-8D, Polypyridine, derivs. 26856-35-9, Dihydrophenanthrene 27986-50-1, Poly(1,3-cyclohexadiene) 30604-81-0, Polypyrrole 30604-81-0D, Polypyrrole, derivs. 51937-67-8, Polyferrocene 71730-08-0, Polyanthraquinone 136902-52-8, 2,2'-Bipyridine homopolymer 136902-52-8D, 2,2'-Bipyridine homopolymer, derivs. 190201-51-5, Pyrimidine homopolymer 190201-57-1, 1,5-Naphthyridine homopolymer (thiophenes, polymers; anodes for lithium battery)

L73 ANSWER 5 OF 12 HCA COPYRIGHT 2007 ACS on STN

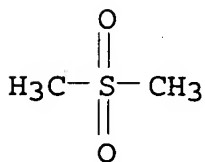
140:238483 **Electrolyte** for a lithium battery. Park, Yong-Chul; Jung, Won-Ii; Kim, Geun-Bae; Cho, Jae-Phil; Jung, Cheol-Soo (S. Korea). U.S. Pat. Appl. Publ. US 2004048163 A1

20040311, 13 pp. (English). CODEN: USXXCO. APPLICATION: US
2003-656086 20030905. PRIORITY: KR 2002-53879 20020906.

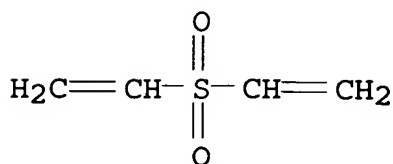
AB An **electrolyte** for a lithium **battery** includes a
nonaq. org. solvent, a lithium salt, and an additive comprising (a)
a sulfone-based compd. and (b) a C3-30 org. peroxide or **azo**
-based compd. The **electrolyte** may further include a
poly(ester)(meth)acrylate or a polymer that is derived from a
(polyester)polyol with at least three hydroxyl (-OH) groups, where a
portion or all of the hydroxyl groups are substituted with a
(meth)acrylic ester and the remaining hydroxyl groups that are not
substituted with the (meth)acrylic ester are substituted with a
group having no radical reactivity. The lithium **battery**
comprising the **electrolyte** of the present invention has a
significantly improved charge-discharge and cycle life
characteristics, recovery capacity ratio at high temp., and swelling
inhibition properties.

IT 67-71-0, Methyl sulfone 77-77-0, Vinyl sulfone
78-67-1, 2,2'-Azobisisobutyronitrile 94-36-0,
Benzoyl peroxide, uses 105-74-8, Lauroyl peroxide
126-33-0, Tetramethylene sulfone 127-63-9, Phenyl
sulfone 620-32-6, Benzyl sulfone 1712-87-4,
m-Toluoyl peroxide 92177-99-6, 3,3,5-Trimethylhexanoyl
peroxide
(**electrolyte** for lithium **battery**).

RN 67-71-0 HCA
CN Methane, sulfonylbis- (9CI) (CA INDEX NAME)

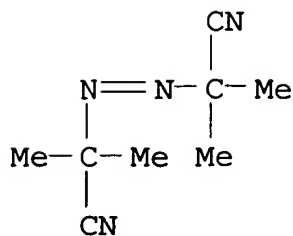


RN 77-77-0 HCA
CN Ethene, 1,1'-sulfonylbis- (9CI) (CA INDEX NAME)

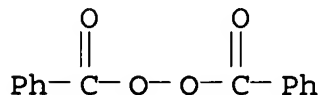


RN 78-67-1 HCA
CN Propanenitrile, 2,2'-azobis[2-methyl- (9CI) (CA INDEX NAME)

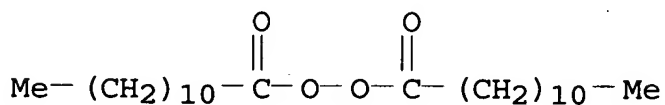
Applicant



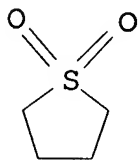
RN 94-36-0 HCA
 CN Peroxide, dibenzoyl (9CI) (CA INDEX NAME)



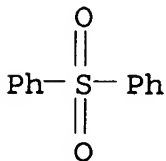
RN 105-74-8 HCA
 CN Peroxide, bis(1-oxododecyl) (9CI) (CA INDEX NAME)



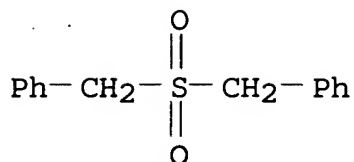
RN 126-33-0 HCA
 CN Thiophene, tetrahydro-, 1,1-dioxide (CA INDEX NAME)



RN 127-63-9 HCA
 CN Benzene, 1,1'-sulfonylbis- (9CI) (CA INDEX NAME)

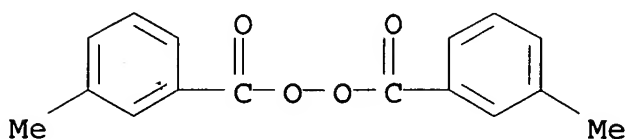


RN 620-32-6 HCA
 CN Benzene, 1,1'-[sulfonylbis(methylene)]bis- (9CI) (CA INDEX NAME)



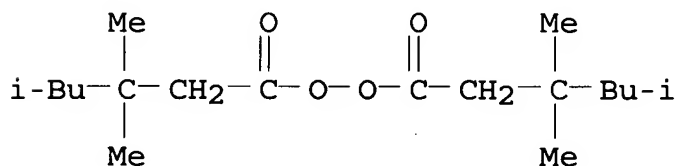
RN 1712-87-4 HCA

CN Peroxide, bis(3-methylbenzoyl) (9CI) (CA INDEX NAME)



RN 92177-99-6 HCA

CN Peroxide, bis(3,3,5-trimethyl-1-oxohexyl) (9CI) (CA INDEX NAME)



IC ICM H01M010-40

INCL 429326000; 429329000; 429339000; 429340000

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38ST lithium **battery electrolyte**IT **Battery electrolytes**(electrolyte for lithium **battery**)

IT Aromatic hydrocarbons, uses

Carbonates, uses

Esters, uses

Ethers, uses

Ketones, uses

(electrolyte for lithium **battery**)IT **Azo compounds**(electrolyte for lithium **battery**)

IT Carbonaceous materials (technological products)

(electrolyte for lithium **battery**)IT **Sulfones**(electrolyte for lithium **battery**)IT **Polyesters, uses**(hydroxy-terminated; **electrolyte** for lithium

- battery)**
- IT Secondary batteries
(lithium; **electrolyte** for lithium battery)
- IT Polyesters, uses
(methacrylate; **electrolyte** for lithium battery
)
- IT Peroxides, uses
(org., C3-30; **electrolyte** for lithium battery
)
- IT Esters, uses
(poly-; **electrolyte** for lithium battery)
- IT Imides
Sulfonic acids, uses
(sulfonimides, perfluoro derivs., lithium salts;
electrolyte for lithium battery)
- IT 56-81-5, Glycerol, uses 71-43-2, Benzene, uses 96-49-1, Ethylene
carbonate 98-95-3, Nitrobenzene, uses 105-58-8, Diethyl
carbonate 108-32-7, Propylene carbonate 108-88-3, Toluene, uses
108-90-7, Chlorobenzene, uses 149-32-6, Erythritol 462-06-6,
Fluorobenzene 616-38-6, Dimethyl carbonate 623-53-0, Methylethyl
carbonate 623-96-1, Dipropyl carbonate 1330-20-7, Xylene, uses
4437-85-8, Butylene carbonate 7790-99-0, Iodine chloride (ICl)
7791-03-9, Lithium perchlorate 10377-51-2, Lithium iodide (LiI)
14024-11-4, Lithium tetrachloroaluminate 14283-07-9, Lithium
tetrafluoroborate 18424-17-4, Lithium hexafluoroantimonate
21324-40-3, Lithium hexafluorophosphate 27359-10-0,
Trifluorotoluene 29935-35-1, Lithium hexafluoroarsenate
33454-82-9, Lithium triflate 35363-40-7, Ethyl propyl carbonate,
uses 39300-70-4, Lithium nickel oxide 56525-42-9, Methyl propyl
carbonate, uses 90076-65-6 131651-65-5, Lithium
nonafluorobutanesulfonate 162684-16-4, Lithium manganese nickel
oxide 193215-00-8, Cobalt lithiummanganese nickel oxide
Co_{0.1}LiMn_{0.2}Ni_{0.7}O₂
(**electrolyte** for lithium battery)
- IT 67-71-0, Methyl sulfone 77-77-0, Vinyl sulfone
78-67-1, 2,2'-Azobisisobutyronitrile 94-36-0,
Benzoyl peroxide, uses 105-64-6, Diisopropyl peroxy dicarbonate
105-74-8, Lauroyl peroxide 126-33-0,
Tetramethylene sulfone 127-63-9, Phenyl sulfone
620-32-6, Benzyl sulfone 1561-49-5, Dicyclohexylperoxy
dicarbonate 1712-87-4, m-Toluoyl peroxide 3006-82-4,
tert-Butylperoxy-2-ethyl hexanoate 14666-78-5 15520-11-3,
Bis(4-tert-butylcyclohexyl)peroxy dicarbonate 26748-41-4
28452-93-9, Butadiene sulfone 32752-09-3, Isobutyl peroxide
92177-99-6; 3,3,5-Trimethylhexanoyl peroxide
(**electrolyte** for lithium battery)
- IT 79-10-7DP, Acrylic acid, reaction product with dipentaerythritol and
ε-caprolactone and butylcarbonic acid 126-58-9DP,

Dipentaerythritol, reaction product with ϵ -caprolactone and acrylic acid and butylcarbonic acid 502-44-3DP,
 ϵ -Caprolactone, reaction product with dipentaerythritol and acrylic acid and butylcarbonic acid 10411-26-4DP,
 MonoButylcarbonate, reaction product with dipentaerythritol and ϵ -caprolactone and acrylic acid
 (electrolyte for lithium battery)

L73 ANSWER 6 OF 12 HCA COPYRIGHT 2007 ACS on STN

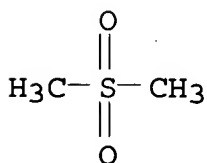
140:149224 Nonaqueous **electrolytic** solution with improved safety for lithium **battery**. Kim, Jun-ho; Lee, Ha-young; Choy, Sang-hoon; Kim, Ho-sung (Samsung SDI Co., Ltd., S. Korea). U.S. Pat. Appl. Publ. US 2004029018 A1 20040212, 12 pp. (English). CODEN: USXXCO. APPLICATION: US 2003-637554 20030811. PRIORITY: KR 2002-47510 20020812.

AB A nonaq. **electrolytic** soln. and a lithium **battery** employing the same include a lithium salt, an org. solvent, and a halogenated benzene compd. The use of the nonaq. **electrolytic** soln. causes formation of a polymer by oxidative decompn. of the **electrolytic** soln. even if a sharp voltage increase occurs due to overcharging of the **battery**, leading to consumption of an overcharge current, thus protecting the **battery**.

IT 67-71-0, Methyl sulfone 77-77-0, Vinyl sulfone 94-36-0, Benzoylperoxide, uses 105-74-8, Lauroyl peroxide 126-33-0, Tetramethylene sulfone 127-63-9, Phenyl sulfone 620-32-6, Benzyl sulfone 1712-87-4, m-Toluoyl peroxide 92177-99-6, 3,3,5-Trimethylhexanoylperoxide
 (nonaq. **electrolytic** soln. with improved safety for lithium **battery**)

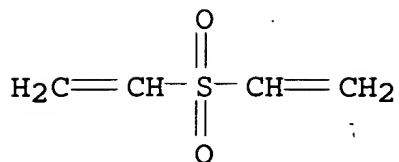
RN 67-71-0 HCA

CN Methane, sulfonylbis- (9CI) (CA INDEX NAME)



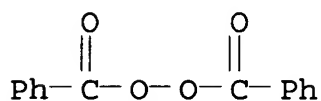
RN 77-77-0 HCA

CN Ethene, 1,1'-sulfonylbis- (9CI) (CA INDEX NAME)



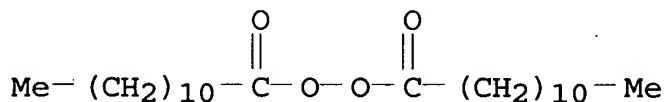
RN 94-36-0 HCA

CN Peroxide, dibenzoyl (9CI) (CA INDEX NAME)



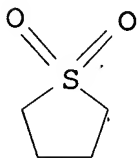
RN 105-74-8 HCA

CN Peroxide, bis(1-oxododecyl) (9CI) (CA INDEX NAME)



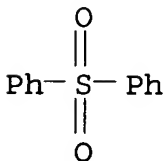
RN 126-33-0 HCA

CN Thiophene, tetrahydro-, 1,1-dioxide (CA INDEX NAME)



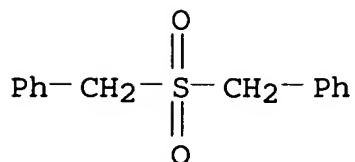
RN 127-63-9 HCA

CN Benzene, 1,1'-sulfonylbis- (9CI) (CA INDEX NAME)



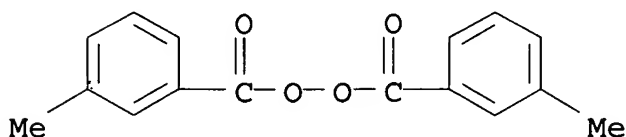
RN 620-32-6 HCA

CN Benzene, 1,1'-[sulfonylbis(methylene)]bis- (9CI) (CA INDEX NAME)



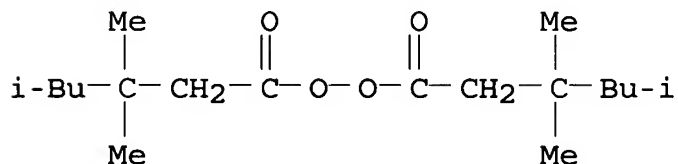
RN 1712-87-4 HCA

CN Peroxide, bis(3-methylbenzoyl) (9CI) (CA INDEX NAME)



RN 92177-99-6 HCA

CN Peroxide, bis(3,3,5-trimethyl-1-oxohexyl) (9CI) (CA INDEX NAME)



IC ICM H01M010-40

INCL 429326000; 429200000; 429340000; 429331000; 429332000

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST lithium **battery** nonaq **electrolyte** soln improved safety

IT Esters, uses

Ethers, uses

Hydrocarbons, uses

(C1-20; nonaq. **electrolytic** soln. with improved safety for lithium **battery**)

IT Aromatic hydrocarbons, uses

(C5-20; nonaq. **electrolytic** soln. with improved safety for lithium **battery**)IT Secondary **batteries**(lithium; nonaq. **electrolytic** soln. with improved safety for lithium **battery**)IT **Battery electrolytes**(nonaq. **electrolytic** soln. with improved safety for lithium **battery**)

IT Polyesters, uses

(nonaq. **electrolytic** soln. with improved safety for

- lithium battery)
- IT Alcohols, uses
(polyhydric; nonaq. **electrolytic** soln. with improved safety for lithium battery)
- IT 3087-37-4, Tetrapropyltitanate
(nonaq. **electrolytic** soln. with improved safety for lithium battery)
- IT 502-44-3, ϵ -Caprolactone 7439-93-2D, Lithium, salt
12190-79-3, Cobalt lithium oxide colio₂
(nonaq. **electrolytic** soln. with improved safety for lithium battery)
- IT 126-58-9DP, Dipentaerythritol, deriv.
(nonaq. **electrolytic** soln. with improved safety for lithium battery)
- IT 56-81-5, Glycerol, uses 67-71-0, Methyl sulfone
71-43-2D, Benzene, halogenated 77-77-0, Vinyl sulfone
94-36-0, Benzoylperoxide, uses 96-49-1, Ethylene carbonate
105-64-6, Diisopropyl peroxy dicarbonate 105-74-8, Lauroyl peroxide
108-32-7, Propylene carbonate 115-77-5, Pentaerythritol, uses 126-33-0, Tetramethylene sulfone
126-58-9, DiPentaerythritol 127-63-9, Phenyl sulfone
456-55-3, Trifluoromethyl phenyl ether 462-06-6, Fluorobenzene
620-32-6, Benzyl sulfone 623-53-0, Ethyl methyl carbonate
1561-49-5, Dicyclohexyl peroxy dicarbonate 1712-87-4, m-Toluoyl peroxide 2972-19-2 3006-82-4, tert-Butylperoxy-2-ethylhexanoate 9002-88-4, Polyethylene 9003-07-0, Polypropylene 14666-78-5 15520-11-3, Bis(4-tert-butylcyclohexyl) peroxydicarbonate 21151-56-4, Benzene, 1-chloro-4-(chloromethoxy)- 21324-40-3, Lithium hexafluorophosphate 28452-93-9, Butadiene sulfone 32752-09-3, Isobutyl peroxide 49717-97-7, 2-Propenoic acid, 2-methyl-, ion(1-) homopolymer, uses 92177-99-6, 3,3,5-Trimethylhexanoylperoxide 651294-25-6 651294-26-7 651294-27-8
(nonaq. **electrolytic** soln. with improved safety for lithium battery)

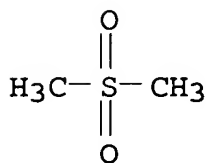
L73 ANSWER 7 OF 12 HCA COPYRIGHT 2007 ACS on STN

139:294681 **Electrolyte** for lithium battery to reduce overcharge and improve electrochemical characteristics. Kim, Jun-Ho; Lee, Ha-Young; Choy, Sang-Hoon; Kim, Ho-Sung; Noh, Hyeong-Gon (Samsung SDI Co., Ltd., S. Korea). U.S. Pat. Appl. Publ. US 2003190529 A1 20031009, 19 pp. (English). CODEN: USXXCO. APPLICATION: US 2003-393294 20030321. PRIORITY: KR 2002-18264 20020403.

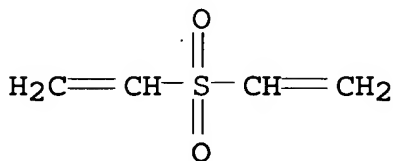
AB An **electrolyte** for a lithium battery includes a nonaq. org. solvent, a lithium salt, and an additive comprising (a) a compd. represented by the formula $[(R_1)_n C_6H_{(6-n+m)}(X)_m]$, and (b) a compd. selected from the group consisting of a sulfone-based compd.,

a poly(ester)(meth)acrylate, a polymer of poly(ester)(meth)acrylate, and a mixt. thereof: wherein R1 is a C1-10 alkyl, a C 1-10 alkoxy, or a C6-10 aryl, and preferably a Me, Et, or methoxy, X is a halogen, and m and n are integers ranging from 1 to 5, where m+n is less than or equal to 6.

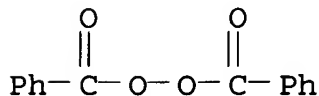
- IT 67-71-0, Methyl sulfone 77-77-0, Vinyl sulfone
 94-36-0, Benzoyl peroxide, uses 105-74-8, Lauroyl
 peroxide 126-33-0, Tetramethylene sulfone 127-63-9
 , Phenyl sulfone 620-32-6, Benzyl sulfone
 1712-87-4, m-Toluoyl peroxide 92177-99-6,
 3,3,5-Trimethylhexanoyl peroxide
 (electrolyte for lithium battery to reduce
 overcharge and improve electrochem. characteristics)
- RN 67-71-0 HCA
 CN Methane, sulfonylbis- (9CI) (CA INDEX NAME)



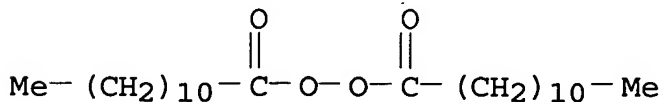
- RN 77-77-0 HCA
 CN Ethene, 1,1'-sulfonylbis- (9CI) (CA INDEX NAME)



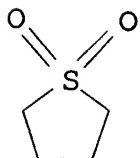
- RN 94-36-0 HCA
 CN Peroxide, dibenzoyl (9CI) (CA INDEX NAME)



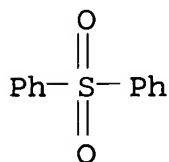
- RN 105-74-8 HCA
 CN Peroxide, bis(1-oxododecyl) (9CI) (CA INDEX NAME)



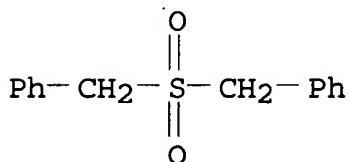
RN 126-33-0 HCA
CN Thiophene, tetrahydro-, 1,1-dioxide (CA INDEX NAME)



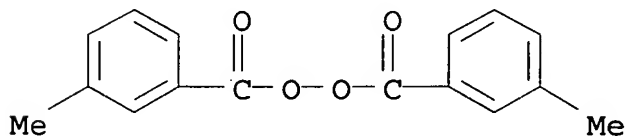
RN 127-63-9 HCA
CN Benzene, 1,1'-sulfonylbis- (9CI) (CA INDEX NAME)



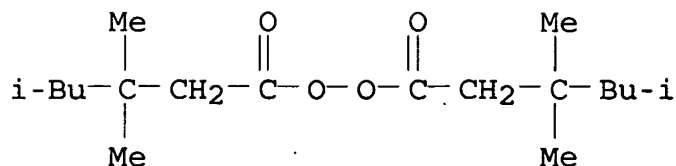
RN 620-32-6 HCA
CN Benzene, 1,1'-[sulfonylbis(methylene)]bis- (9CI) (CA INDEX NAME)



RN 1712-87-4 HCA
CN Peroxide, bis(3-methylbenzoyl) (9CI) (CA INDEX NAME)



RN 92177-99-6 HCA
CN Peroxide, bis(3,3,5-trimethyl-1-oxohexyl) (9CI) (CA INDEX NAME)



IC ICM H01M006-18

INCL 429307000; 429309000; 429326000; 429322000; 429323000; 429330000

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST lithium **battery electrolyte** overcharge lowering

IT **Battery electrolytes**

(**electrolyte** for lithium **battery** to reduce overcharge and improve electrochem. characteristics)

IT **Secondary batteries**

(lithium; **electrolyte** for lithium **battery** to reduce overcharge and improve electrochem. characteristics)

IT Peroxides, uses

(org.; **electrolyte** for lithium **battery** to reduce overcharge and improve electrochem. characteristics)

IT Alcohols, uses

(trihydric; **electrolyte** for lithium **battery** to reduce overcharge and improve electrochem. characteristics)

IT 3087-37-4, Tetrapropyltitanate

(**electrolyte** for lithium **battery** to reduce overcharge and improve electrochem. characteristics)

IT 71-43-2, Benzene, uses 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate 108-88-3, Toluene, uses 462-06-6, Fluorobenzene 616-38-6, Dimethyl carbonate 623-53-0, Ethyl methyl carbonate 623-96-1, Dipropyl carbonate 1330-20-7, Xylene, uses 4437-85-8, Butylene carbonate 7447-41-8, Lithium chloride (LiCl), uses 7791-03-9, Lithium perchlorate 10377-51-2, Lithium iodide (LiI) 12355-58-7, Lithium aluminate (Li₅AlO₄) 14283-07-9, Lithium tetrafluoroborate 18424-17-4, Lithium hexafluoroantimonate 21324-40-3, Lithium hexafluorophosphate 27359-10-0, Trifluorotoluene 29935-35-1, Lithium hexafluoroarsenate 33454-82-9, Lithium triflate 35363-40-7, Ethyl propyl carbonate, uses 56525-42-9, Methyl propyl carbonate, uses 90076-65-6 131651-65-5, Lithium perfluorobutanesulfonate

(**electrolyte** for lithium **battery** to reduce overcharge and improve electrochem. characteristics)

IT 126-58-9DP, Dipentaerythritol, reaction product with

ϵ -caprolactone 502-44-3DP, ϵ -Caprolactone,

reaction product with dipentaerythritol 609772-45-4P

(**electrolyte** for lithium **battery** to reduce overcharge and improve electrochem. characteristics)

IT 56-81-5, Glycerol, uses 67-71-0, Methyl sulfone
77-77-0, Vinyl sulfone 79-10-7D, Acrylic acid,
ω-fatty acid esters C2-C21 79-41-4D, Methacrylic acid,
ω-fatty acid esters C2-C21 94-36-0, Benzoyl
peroxide, uses 104-92-7, 4-Bromoanisole 105-64-6, Diisopropyl
peroxy dicarbonate 105-74-8, Lauroyl peroxide
126-33-0, Tetramethylene sulfone 127-63-9, Phenyl
sulfone 149-32-6, Erythritol 452-10-8; 2,4-Difluoroanisole
456-49-5, 3-Fluoroanisole 459-60-9, 4-Fluoroanisole
620-32-6, Benzyl sulfone 623-12-1, 4-Chloroanisole
1561-49-5, Dicyclohexyl peroxy dicarbonate 1712-87-4,
m-Toluoyl peroxide 2398-37-0, 3-Bromoanisole 2845-89-8,
3-Chloroanisole 3006-82-4, tert-Butylperoxy-2-ethyl-hexanoate
14666-78-5 15520-11-3, Bis(4-tert-butylcyclohexyl)peroxy
dicarbonate 28452-93-9, Butadiene sulfone 32752-09-3, Isobutyl
peroxide 92177-99-6, 3,3,5-Trimethylhexanoyl peroxide
93343-10-3, 3,5-Difluoroanisole 202925-08-4, 3-Chloro-5-
fluoroanisole 609365-67-5
(**electrolyte** for lithium **battery** to reduce
overcharge and improve electrochem. characteristics)

L73 ANSWER 8 OF 12 HCA COPYRIGHT 2007 ACS on STN

139:182872 Polymer **electrolyte** for lithium secondary

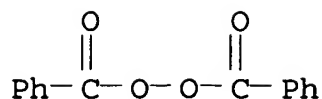
battery. Jung, Cheol-Soo; Kim, Ki-Ho; Bong, Cul-Hwen; Yang,
Doo-Kyung; Lee, Kyoung-Hee; Lee, Yong-Beom; Lim, Hyun-Leong;
Yamaguchi, Takitaro; Shimizu, Ryuichi (Samsung SDI Co., Ltd., S.
Korea). U.S. Pat. Appl. Publ. US 2003157411 A1 20030821, 14 pp.
(English). CODEN: USXXCO. APPLICATION: US 2002-287486 20021105.
PRIORITY: KR 2002-8303 20020216.

AB A solid polymer **electrolyte**, a lithium **battery**
employing the same, and methods of forming the **electrolyte**
and the lithium **battery** are disclosed. The polymer
electrolyte includes polyester methacrylate having a
polyester polyol moiety having three or more hydroxide (-OH) groups,
at least one hydroxide group being substituted by a methacrylic ester
group and at least one hydroxide group being substituted by a
radical non-reactive group, or its polymer, a peroxide having 6-40
carbon atoms, and an **electrolytic** soln. including a
lithium salt and an org. solvent.

IT 94-36-0, Benzoyl peroxide, processes 105-74-8,
Lauroyl peroxide
(polymer **electrolyte** for lithium secondary
battery)

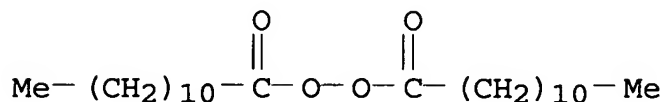
RN 94-36-0 HCA

CN Peroxide, dibenzoyl (9CI) (CA INDEX NAME)



RN 105-74-8 HCA

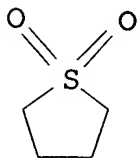
CN Peroxide, bis(1-oxododecyl) (9CI) (CA INDEX NAME)



IT 126-33-0, Sulfolane
(polymer **electrolyte** for lithium secondary
battery)

RN 126-33-0 HCA

CN Thiophene, tetrahydro-, 1,1-dioxide (CA INDEX NAME)



IC ICM H01M010-40

ICS H01M010-04

INCL 429317000; 429307000; 429316000; 029623100

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38

ST polymer **electrolyte** lithium secondary **battery**

IT Aromatic hydrocarbons, uses
(fluoro; polymer **electrolyte** for lithium secondary
battery)

IT Secondary **batteries**
(lithium; polymer **electrolyte** for lithium secondary
battery)

IT **Battery electrolytes**
Polymer **electrolytes**
(polymer **electrolyte** for lithium secondary
battery)

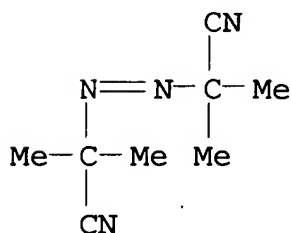
IT Polyesters, uses
(polymer **electrolyte** for lithium secondary
battery)

IT 3087-37-4, Tetrapropyltitanate
(polymer **electrolyte** for lithium secondary

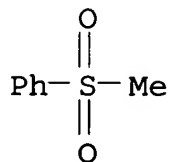
- battery)**
- IT 94-36-0, Benzoyl peroxide, processes 105-74-8, Lauroyl peroxide (polymer **electrolyte** for lithium secondary **battery)**
- IT 67-68-5, DmsO, uses 68-12-2, Dmf, uses 75-05-8, Acetonitrile, uses 96-47-9, 2-Methyltetrahydrofuran 96-48-0, γ -Butyrolactone 96-49-1, Ethylene carbonate 98-95-3, Nitrobenzene, uses 100-47-0, Benzonitrile, uses 105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate 108-90-7, Chlorobenzene, uses 109-99-9, Thf, uses 110-71-4, 1,2-Dimethoxyethane 111-46-6, Diethylene glycol, uses 115-10-6, Dimethyl ether 126-33-0, Sulfolane 127-19-5, Dimethylacetamide 542-52-9, Dibutyl carbonate 616-38-6, Dimethyl carbonate 623-53-0, Ethyl methyl carbonate 623-96-1, Dipropyl carbonate 646-06-0, Dioxolane 872-36-6, Vinylene carbonate 1072-47-5, 1,3-Dioxolane, 4-methyl 1300-21-6, Dichloroethane 4437-85-8, Butylene carbonate 6482-34-4, Diisopropyl carbonate 7447-41-8, Lithium chloride (LiCl), uses 7791-03-9, Lithium perchlorate 9002-88-4, Polyethylene 9003-07-0, Polypropylene 10377-51-2, Lithium iodide (LiI) 14024-11-4, Aluminum lithium chloride AlLiCl_4 14283-07-9, Lithium tetrafluoroborate 18424-17-4, Lithium hexafluoroantimonate 21324-40-3, Lithium hexafluorophosphate 29935-35-1, Lithium hexafluoroarsenate 30714-78-4, Ethyl butyl carbonate 33454-82-9, Lithium triflate 51729-83-0, Methyl isopropyl carbonate 56525-42-9, Methyl propyl carbonate, uses 90076-65-6 131651-65-5 (polymer **electrolyte** for lithium secondary **battery)**
- IT 95-52-3, 2-Fluorotoluene 352-32-9, 4-Fluorotoluene 352-70-5, 3-Fluorotoluene 462-06-6, Benzene, fluoro- 581054-59-3D, mixed acrylic and pentanoic acid esters (polymer **electrolyte** for lithium secondary **battery)**
- L73 ANSWER 9 OF 12 HCA COPYRIGHT 2007 ACS on STN 126:114265 Toxicity assessment of the samples from water environment using cultured mammalian cells. Kunimoto, Manabu; Yasuhara, Akio; Soma, Yuko; Nakasugi, Osami (Environmental Health Sciences Division, National Institute Environmental Studies, Tsukuba, 305, Japan). Mizu Kankyo Gakkaishi, 19(11), 855-860 (English) 1996. CODEN: MKGAEY. ISSN: 0916-8958. Publisher: Nippon Mizu Kankyo Gakkai.
- AB To evaluate the toxicity other than mutagenicity or carcinogenicity present in the water environment, in vitro cytotoxicity tests using cultured mammalian cells were utilized. Cytotoxicity was estd. based on the changes in viable cell nos. of **primary** rat cerebellar cells, rat pheochromocytoma cell PC 12h, and normal rat kidney epithelial cell NRK-52E.

Evaluation of these in vitro systems was performed by testing ref. chems. proposed by MEIC (Multicenter Evaluation of In Vitro Cytotoxicity), an international program for the validation of in vitro cytotoxicity tests. When cells in culture were exposed to landfill leachate for 48 h, viable cell nos. decreased dose dependently. However, fractions prepd. by condensation and extn. from the leachates showed much less effects on the viable cell nos. Their individual cytotoxicity did not account for that of unfractionated leachate, suggesting that component(s) with higher cytotoxicity may not be successfully recovered during the condensation and extn. process. Among the silica-gel column fractions of acetone-exts. of sediment samples, fractions eluted with acetone showed the highest cytotoxicity. These results indicate that the cytotoxicity of water samples like landfill leachates or of their exts. can be detected with the present assay system but toxic components may not be recovered quant. during the condensation and extn. process.

- IT 78-67-1, α, α' -Azobis(isobutyronitrile)
 3112-85-4, Methyl phenyl sulfone
 (toxicity assessment of the samples from water environment using cultured mammalian cells)
- RN 78-67-1 HCA
- CN Propanenitrile, 2,2'-azobis[2-methyl- (9CI) (CA INDEX NAME)



- RN 3112-85-4 HCA
- CN Benzene, (methylsulfonyl)- (CA INDEX NAME)



- CC 4-1 (Toxicology)
 Section cross-reference(s): 61
- IT 50-06-6, Phenobarbital, biological studies 50-48-6, Amitriptyline
 50-54-4, Quinidine sulfate 50-63-5, Chloroquine phosphate
 50-78-2, Acetyl salicylic acid 54-11-5, Nicotine 54-85-3,

Isoniazid 55-48-1, Atropine sulfate 56-23-5, biological studies 56-75-7, Chloramphenicol 57-41-0, Phenytoin 58-08-2, Caffeine, biological studies 58-55-9, Theophylline, biological studies 58-89-9, Lindane 60-13-9, Amphetamine sulfate 62-76-0, Sodium oxalate 64-17-5, Ethanol, biological studies 67-56-1, Methanol, biological studies 67-63-0, Isopropyl alcohol, biological studies 67-66-3, Chloroform, biological studies 70-30-4, Hexachlorophene 71-55-6, 1,1,1-Trichloroethane 75-09-2, Dichloromethane, biological studies 78-67-1, α, α' -Azobis(isobutyronitrile) 81-81-2, Warfarin 84-74-2, Dibutyl phthalate 87-86-5, Pentachlorophenol 94-75-7, biological studies 103-90-2 106-46-7, 1,4-Dichlorobenzene 107-21-1, 1,2-Ethanediol, biological studies 108-95-2, Phenol, biological studies 110-67-8, 3-Methoxypropanenitrile 110-88-3, Trioxane, biological studies 111-76-2, 2-Butoxyethanol 112-49-2, Triethylene glycol dimethyl ether 115-96-8, Tris(2-chloroethyl)phosphate 121-75-5 123-91-1, 1,4-Dioxane, biological studies 127-19-5 130-61-0, Thioridazine hydrochloride 151-50-8, Potassium cyanide 152-11-4, Verapamil hydrochloride 318-98-9, Propranolol hydrochloride 341-69-5, Orphenadrine hydrochloride 439-14-5, Diazepam 469-62-5, Dextropropoxyphene 615-58-7, 2,4-Dibromophenol 632-22-4, Tetramethylurea 1327-53-3, Arsenic trioxide 1330-20-7, Xylene, biological studies 3112-85-4, Methyl phenyl sulfone 4320-85-8 4685-14-7, Paraquat 6970-56-5 7326-46-7, Tetrahydro-2-methyl-2-furanol 7446-18-6, Thallium sulfate 7447-40-7, Potassium chloride, biological studies 7487-94-7, Mercuric chloride, biological studies 7647-14-5, Sodium chloride (NaCl), biological studies 7681-49-4, Sodium fluoride, biological studies 7720-78-7, Ferrous sulfate 7758-98-7, Cupric sulfate, biological studies 10022-31-8, Barium nitrate 10377-48-7, Lithium sulfate 13423-22-8 20830-75-5, Digoxin 37306-44-8, Triazole 53778-61-3 54063-15-9 74498-88-7, 1-Methoxy-2-(methoxymethoxy)ethane (toxicity assessment of the samples from water environment using cultured mammalian cells)

L73 ANSWER 10 OF 12 HCA COPYRIGHT 2007 ACS on STN

126:92052 Catalyst-containing solid **electrolytes** and **batteries** using these **electrolytes**.

Chaloner-Gill, Benjamin; Olsen, Ib I.; Saidi, Eileen S. (USA). U.S. US 5580680 A 19961203, 8 pp. (English). CODEN: USXXAM. APPLICATION: US 1994-267066 19940627.

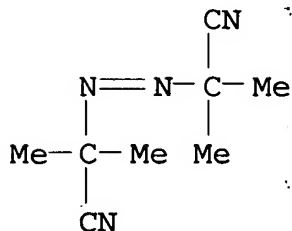
AB The **electrolytes** include a 1st catalyst that is capable of initiating the polymn. of solvent components at elevated temps. to increase the resistance (or impedance) of the solid **electrolyte** and thereby prevent thermal runaway and/or a 2nd catalyst that is capable of initiating the polymn. of flammable substances (e.g., olefins) in the solvent. To assure that the

catalysts do not prematurely initiate polymn. below a certain temp., the catalysts may be microencapsulated within a heat-sensitive material that disintegrates or dissolve at a predetd. elevated temp. to release the catalysts. Microencapsulation permits the controlled release of the catalysts into the **electrolyte** under the appropriate conditions.

IT 78-67-1, Azobisisobutyronitrile 94-36-0, Benzoyl
~~peroxide, uses 110-22-5, Acetyl peroxide~~
 (polymn. catalyst for **battery solid electrolytes**)

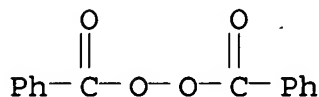
RN 78-67-1 HCA

CN Propanenitrile, 2,2'-azobis[2-methyl- (9CI) (CA INDEX NAME)



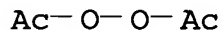
RN 94-36-0 HCA

CN Peroxide, dibenzoyl (9CI) (CA INDEX NAME)



RN 110-22-5 HCA

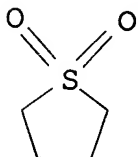
CN Peroxide, diacetyl (9CI) (CA INDEX NAME)



IT 126-33-0, Sulfolane
 (polymn. catalyst for **battery solid electrolytes** contg. solvent of)

RN 126-33-0 HCA

CN Thiophene, tetrahydro-, 1,1-dioxide (CA INDEX NAME)

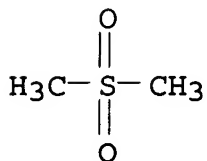


- IC ICM H01M006-16
INCL 429192000
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 37
ST **battery solid electrolyte solvent polymn catalyst; flammable substance polymn catalyst battery electrolyte; safety battery polymn catalyst electrolyte**
IT Polymerization catalysts
(Ziegler-Natta; for **battery solid electrolytes**)
IT Polymerization catalysts
(**battery solid electrolytes** contg.)
IT **Battery electrolytes**
(contg. polymn. catalyst)
IT Secondary **batteries**
(lithium; with polymn. catalysts for safety)
IT Safety
(of lithium **batteries** with polymn. catalysts-contg. **solid electrolytes**)
IT Bronsted acids
(polymn. catalyst for **battery solid electrolytes**)
IT 78-67-1, Azobisisobutyronitrile 94-36-0, Benzoyl peroxide, uses 110-22-5, Acetyl peroxide 7440-23-5, Sodium, uses 7637-07-2, Boron trifluoride, uses (polymn. catalyst for **battery solid electrolytes**)
IT 67-68-5, uses 96-48-0, γ -Butyrolactone 96-49-1, Ethylene carbonate 108-32-7, Propylene carbonate 110-71-4, Glyme 111-96-6, Diglyme 112-49-2, Triglyme 126-33-0, Sulfolane 143-24-8, Tetraglyme 646-06-0, Dioxolane (polymn. catalyst for **battery solid electrolytes** contg. solvent of)

L73 ANSWER 11 OF 12 HCA COPYRIGHT 2007 ACS on STN
108:132762 Effect of some oxygen-containing compounds on transfer of ions through a film from an ionic copolymer. Chekmarev, P. M.; Tikhonov, E. N.; Luk'yanenko, N. G. (USSR). Zhurnal Prikladnoi Khimii (Sankt-Peterburg, Russian Federation), 60(12), 2736-8 (Russian) 1987. CODEN: ZPKHAB. ISSN: 0044-4618.
AB The ion transfer in **electrolysis** of NaCl through films of Na sulfonate group-contg. fluoropolymer ether ionomers modified with diethylene glycol di-Me ether (I), 18-Crown-6, amino group-terminated polyether, **azo** group-terminated polyether, perfluorinated polyether, polyethylene glycol (II), and Me₂SO was studied. The modified films were used for sepg. the

cathodic and anodic spaces in the **electrolytic cell**. The highest current efficiency ($\alpha \geq 90\%$) was attained for ionomer films modified with 18-Crown-6, I, and II, while the lowest α was obsd. for films modified with perfluorinated polyethers. The pos. role of modifiers was due to the presence of unshared electron pairs in the O atom of the modifier mol. leading to an increase in α .

IT 67-71-0, Dimethylsulfone
(fluoropolymer ether ionomers modified with, ion transfer through)
RN 67-71-0 HCA
CN Methane, sulfonylbis- (9CI) (CA INDEX NAME)

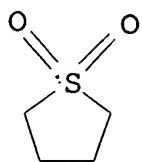


CC 37-6 (Plastics Manufacture and Processing)
ST ion transfer fluoropolymer ether ionomer; **electrolysis**
fluoropolymer ether ionomer film
IT 67-71-0, Dimethylsulfone 68-12-2, uses and miscellaneous
111-96-6 24194-62-5 25322-68-3
(fluoropolymer ether ionomers modified with, ion transfer through)

L73 ANSWER 12 OF 12 HCA COPYRIGHT 2007 ACS on STN
48:60269 Original Reference No. 48:10636d-g Reactions of N-containing compounds derived from benzotrifluoride. Cartwright, R. A.; Tatlow, J. C. (Univ. Birmingham, UK). Journal of the Chemical Society 1994-8 (Unavailable) 1953. CODEN: JCSOA9. ISSN: 0368-1769. OTHER SOURCES: CASREACT 48:60269.
AB [R = F3C throughout in this abstr.] It appears that R substituents in aromatic nuclei hinder certain acid-catalyzed transformations such as the conversion of a diazoamino compd. to an aminoazo compd. and the benzidine transformation to the hydrazo deriv. 3-RC6H4NH2 was diazotized in the usual way and coupled with various reagents to give the expected **azo** compds. Self-coupling proceeded readily in the absence of excess mineral acid, giving 3-(3-RC6H4N:NNH)C6H4R (I) which could not be rearranged to the aminoazo compd. (3-RC6H4N:)2 was prepd. by chem. and **electrolytic** reduction of 3-RC6H4NO2. The azoxy and hydrazo compds. were prepd. by classical methods. Similar expts. were carried out with 2-RC6H4NO2. The new compds. prepd. are: 4-(3-RC6H4N2)C6H4OH, yellow, m. 110-11°; x, 2-(3-RC6H4N2)C10H6OH, red, m. 165-6°; I, yellow, m.

117-18°; (3-RC₆H₄)₂N₂O, m. 47°; [2,4-R(RCON)C₆H₃]₂, m.
 209-10°; [2,4-R(H₂N)C₆H₃]₂, m. 180-2°; (2-RC₆H₄)₂, b.
 230°, m. 32°; (2-RC₆H₄N:) ₂, red, m. 126-8°;
 (2-RC₆H₄NH)₂, colorless, m. 122-3°; x,2-(RC₆H₄N₂)C₁₀H₆OH,
 red, m. 157-8°; [3,4-R(H₂N)C₆H₃]₂, m. 115°;
 [3,4-R(RCONH)C₆H₃]₂, m. 201°.

IT 126-33-0P, Thiophene, tetrahydro-, 1,1-dioxide
 (prepn. of)
 RN 126-33-0 HCA
 CN Thiophene, tetrahydro-, 1,1-dioxide (CA INDEX NAME)



CC 10 (Organic Chemistry)
 IT 126-33-0P, Thiophene, tetrahydro-, 1,1-dioxide 317-74-8P,
 2-Naphthol, [α,α,α -trifluoro-m-tolylazo]-
 328-96-1P, Aniline, N,N-dimethyl-p-(α,α,α -
 trifluoro-m-tolylazo)- 341-58-2P, m-Tolidine,
 $\alpha,\alpha,\alpha,\alpha',\alpha',\alpha'$ -hexafluoro-
 346-88-3P, o-Tolidine, $\alpha,\alpha,\alpha,\alpha',\alpha',\alpha'$.al
 pha.'-hexafluoro- 351-36-0P, m-Acetotoluidide,
 α,α,α -trifluoro- 370-36-5P, Phenol,
 p-(α,α,α -trifluoro-m-tolylazo)- 438-85-7P,
 4',4'''-Bi-m-acetotoluidide, $\alpha,\alpha,\alpha,\alpha',\alpha',\alpha'$.alpha
 .', $\alpha',2,2,2,2'',2'',2''$ -dodecafluoro- 441-27-0P, 2-Naphthol,
 [α,α,α -trifluoro-o-tolylazo]- 444-65-5P,
 4',4'''-Bi-o-acetotoluidide, $\alpha,\alpha,\alpha,\alpha',\alpha',\alpha'$.alpha
 .', $\alpha',2,2,2,2'',2'',2''$ -dodecafluoro- 444-95-1P, Hydrazine,
 1,2-bis(α,α,α -trifluoro-o-tolyl)- 457-07-8P,
 m,m'-Azoxytoluene, $\alpha,\alpha,\alpha,\alpha',\alpha',\alpha'$.alpha
 '-hexafluoro- 567-15-7P, o,o'-Bitolyl,
 $\alpha,\alpha,\alpha,\alpha',\alpha',\alpha'$ -hexafluoro-
 577-09-3P, o,o'-Azotoluene, $\alpha,\alpha,\alpha,\alpha',\alpha',\alpha'$.alpha
 ', α' -hexafluoro- 588-00-1P, m,m'-Azotoluene,
 $\alpha,\alpha,\alpha,\alpha',\alpha',\alpha'$ -hexafluoro-
 6223-83-2P, 4-Fluorencarboxylic acid, 9-oxo- 7639-94-3P,
 Triazene, 1,3-bis(α,α,α -trifluoro-m-tolyl)-
 (prepn. of)

=> D L75 1-13 CBIB ABS HITSTR HITIND

L75 ANSWER 1 OF 13 HCA COPYRIGHT 2007 ACS on STN

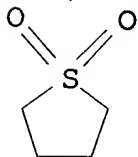
140:202430 Salts of pentacyclic or tetrapentalene derived anions, and their uses as ionic conductive materials. Armand, Michel; Michot, Christophe; Gauthier, Michel; Choquette, Yves (Hydro-Quebec, Can.; Centre National De La Recherche Scientifique (CNRS)). Eur. Pat. Appl. EP 1391952 A2 20040225, 33 pp. DESIGNATED STATES: R: DE, FR, GB, IT. (French). CODEN: EPXXDW. APPLICATION: EP 2003-292436 19971230. PRIORITY: CA 1996-2194127 19961230; CA 1997-2199231 19970305; EP 1997-403188 19971230.

AB This invention describes ionic compds. where the anionic charge is delocalized. One compd. of the invention contains an anionic part assocd. with at least one mono- or multivalent cationic part M^{m+} , in a no. sufficient to ensure electronic neutrality of the material. M can be a hydronium, nitrosyl NO^+ , an ammonium NH_4^+ , a metallic cation with valence m, an org. cation having a valence m, or an organometallic cation having valence m. The anionic charge is carried by a new pentacyclic moiety or deriv. of tetrapentalene carrying electroattractive substituents. The compds. are used notably for ionic conduction, electronic conductors, dyes and colorants, and catalysts for diverse chem. reactions. They can also be used as **electrolytes** in fuel cells and **batteries**.

IT 126-33-0D, Sulfolane, derivs.
(solvent for title compds.; salts of pentacyclic or tetrapentalene derived anions, and their uses as ionic conductive materials)

RN 126-33-0 HCA

CN Thiophene, tetrahydro-, 1,1-dioxide (CA INDEX NAME)



IC ICM H01M006-16

ICS H01M010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 27, 28, 29, 35, 76

ST pentacyclic tetrapentalene salt charge delocalized anion ionic conduction; alkali alk earth transition metal salt heterocyclic **electrolyte polymer; electrochem cell**
fuel polyelectrolyte cond soly catalysis fluoropolymer polysiloxane

IT Optical absorption
(by polymer **electrolytes**; salts of pentacyclic or tetrapentalene derived anions, and their uses as ionic conductive materials)

IT Carbon black, uses

(composite electrodes with soft polymer or LiCoO_2 and polymer gel **electrolytes**, or with acetylene black, VO_2 and PEO; salts of pentacyclic or tetrapentalene derived anions, and their uses as ionic conductive materials)

- IT Lithiation
(during **battery** operation; salts of pentacyclic or tetrapentalene derived anions, and their uses as ionic conductive materials)
- IT Polyoxyalkylenes, processes
(**electrolyte** complexes with lithium salts, carbon blacks, (1,2,3-triazolium) ionic liqs., and other materials; salts of pentacyclic or tetrapentalene derived anions, and their uses as ionic conductive materials)
- IT Open circuit potential
(of dye-sensitized solar cells with imidazolium-triazole-iodide **electrolytes**; salts of pentacyclic or tetrapentalene derived anions, and their uses as ionic conductive materials)
- IT Ionic conductivity
(of lithium salts in polymer **electrolytes** and polymer gel **electrolytes**; salts of pentacyclic or tetrapentalene derived anions, and their uses as ionic conductive materials)
- IT Cyclic voltammetry
(of **secondary battery cells** with polymer gel **electrolytes**; salts of pentacyclic or tetrapentalene derived anions, and their uses as ionic conductive materials)
- IT Secondary **batteries**
(salts of pentacyclic or tetrapentalene derived anions for use in; salts of pentacyclic or tetrapentalene derived anions, and their uses as ionic conductive materials)
- IT Aldol condensation catalysts
- Antistatic agents
- Coloring materials
- Corrosion inhibitors
- Dyes
- Electron delocalization
- Esterification
- Friedel-Crafts reaction catalysts
- Fuel cell separators
- Heterojunction solar cells
- Ionic liquids
- Michael reaction catalysts
- Plasticizers
- Polyelectrolytes
- Polymer **electrolytes**
- Polymerization catalysts
- Solubility

Substitution reaction, nucleophilic

Surfactants

(salts of pentacyclic or tetrapentalene derived anions, and their uses as ionic conductive materials)

- IT 12036-21-4, Vanadium dioxide
(**battery** electrode composites with acetylene black and PEO; salts of pentacyclic or tetrapentalene derived anions, and their uses as ionic conductive materials)
- IT 25322-68-3, Polyethylene oxide
(**electrolyte** complexes with lithium salts, carbon blacks, (1,2,3-triazolium) ionic liqs., and other materials; salts of pentacyclic or tetrapentalene derived anions, and their uses as ionic conductive materials)
- IT 210289-62-6P
(**electrolyte**, ionic liq.; salts of pentacyclic or tetrapentalene derived anions, and their uses as ionic conductive materials)
- IT 7429-90-5, Aluminum, uses
(in **electrochem. cells**, and corrosion of; salts of pentacyclic or tetrapentalene derived anions, and their uses as ionic conductive materials)
- IT 96-49-1, Ethylene carbonate 108-32-7, Propylene carbonate
(in gel polymer **electrolyte**; salts of pentacyclic or tetrapentalene derived anions, and their uses as ionic conductive materials)
- IT 107-13-1, Acrylonitrile, reactions
(in gel polymer **electrolyte**; salts of pentacyclic or tetrapentalene derived anions, and their uses as ionic conductive materials)
- IT 661461-54-7P
(pure and polymer **electrolytes** with polyethylene oxide; salts of pentacyclic or tetrapentalene derived anions, and their uses as ionic conductive materials)
- IT 76-05-1, reactions 78-94-4, Methyl vinyl ketone, reactions
94-41-7 98-88-4, Benzoyl chloride 100-52-7, Benzaldehyde, reactions
100-66-3, Anisole, reactions 102-52-3, 1,1,3,3-Tetramethoxypropane 106-20-7, Di-2-ethylhexylamine
108-24-7, Acetic anhydride 109-72-8, Butyllithium, reactions
110-61-2, Succinic dinitrile 112-76-5, Stearic acid chloride
121-44-8, Triethylamine, reactions 143-33-9, Sodium cyanide
144-55-8, Sodium bicarbonate, reactions 303-04-8, 2,3-Dichloro-Hexafluoro-2-butene 326-90-9, 4,4,4-Trifluoro-1-(2-furyl)-1,3-butanedione 326-91-0 375-72-4, Perfluorobutanesulfonyl fluoride 407-38-5, 2,2,2-Trifluoroethyl trifluoroacetate 421-83-0, Trifluoromethanesulfonyl chloride
497-19-8, Sodium carbonate, reactions 538-75-0, Dicyclohexylcarbodiimide 542-92-7, Cyclopentadiene, reactions
554-13-2, Lithium carbonate 584-08-7, Potassium carbonate

676-58-4, Methylmagnesium chloride 677-25-8, Ethenesulfonyl fluoride 692-50-2 693-13-0, 1,3-Diisopropylcarbodiimide 764-93-2, 1-Decyne 765-12-8, Triethylene glycol divinyl ether 917-70-4, Lanthanum acetate 937-14-4, 3-Chloroperoxybenzoic acid 1000-84-6 1068-57-1, Acetylhydrazide 1122-28-7, 4,5-Dicyanoimidazole 1310-58-3, Potassium hydroxide, reactions 1522-22-1, Hexafluoroacetylacetone 1643-19-2, Tetrabutylammonium bromide 1648-99-3 2094-98-6, 1,1'-Azobis(cyclohexanecarbonitrile) 2582-30-1, 1-Aminoguanidine bicarbonate 2633-67-2, 4-Styrenesulfonyl chloride 2638-94-0, 4,4'-Azobis(4-cyanovaleric acid) 2893-78-9, Dichloroisocyanuric acid, sodium salt 3804-23-7, Scandium acetate 4546-95-6, 1,2,3-Triazole-4,5-dicarboxylic acid 7447-41-8, Lithium chloride, reactions 7647-01-0, Hydrochloric acid, reactions 7647-14-5, Sodium chloride, reactions 7664-39-3, Hydrofluoric acid, reactions 7757-82-6, Sodium sulfate, reactions 7758-09-0, Potassium nitrite 7782-50-5, Chlorine, reactions 7789-23-3, Potassium fluoride 9002-92-0, Brij 30 13360-57-1 13637-84-8, Chlorosulfonyl fluoride 13781-67-4, 2-(3-Thienyl)ethanol 14635-75-7, Nitrosonium tetrafluoroborate 16090-14-5 17455-13-9, 18-Crown-6 17587-22-3, 1,1,1,2,2,3,3-Heptafluoro-7,7-dimethyl-4,6-octanedione 20583-66-8, 1,1,1,5,5,6,6,7,7,7-Decafluoro-2,4-Heptanedione 26628-22-8, Sodium azide 27070-49-1, 1,2,3-Triazole 31469-15-5, 1-Methoxy-1-(trimethylsilyloxy)-2-methyl-1-propene 39262-22-1 39377-49-6, Copper cyanide 53188-07-1, Trolox 56512-49-3, 4-(Dimethylamino)azobenzene-4'-sulfonyl chloride 65039-09-0, 1-Ethyl-3-methyl-1H-imidazolium chloride 66051-48-7 77968-17-3 81850-46-6 81850-47-7 89183-45-9, Polyaniline hydrochloride 210049-00-6 210289-26-2 210289-55-7 210469-93-5 661461-58-1 661461-61-6

(salts of pentacyclic or tetrapentalene derived anions, and their uses as ionic conductive materials)

IT 126-33-0D, Sulfolane, derivs.

(solvent for title compds.; salts of pentacyclic or tetrapentalene derived anions, and their uses as ionic conductive materials)

L75 ANSWER 2 OF 13 HCA COPYRIGHT 2007 ACS on STN

138:312868 **Electrolytic** capacitor. Yoshioka, Toshichika (Nippon Chemi-Con Corp., Japan). Jpn. Kokai Tokkyo Koho JP 2003109880 A 20030411, 5 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-304366 20010928.

AB An **electrolytic** capacitor suitable for high-temp. application comprises wound anode and cathode foils impregnated with an **electrolyte** of a sulfolane-based solvent and a butyl-rubber sealing material of a **peroxide**-vulcanized isoprene-isobutylene-divinylbenzene copolymer. Specifically, the cathode foil may comprise an Al foil having a surface film of TiN,

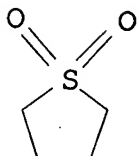
Zr nitride, Ta nitride, Nb nitride, Ti, Zr, Ta, or Nb.

IT 126-33-0, Sulfolane

(sulfolane **electrolytic** and butyl-rubber sealing material of **electrolytic** capacitor)

RN 126-33-0 HCA

CN Thiophene, tetrahydro-, 1,1-dioxide (CA INDEX NAME)



IC ICM H01G009-10

ICS C23C030-00; H01G009-035; H01G009-04; C22C021-00

CC 76-10 (Electric Phenomena)

ST **electrolytic** capacitor sulfolane **electrolyte** butyl rubber sealing material

IT Synthetic rubber, uses

(divinylbenzene-isobutylene-isoprene; sulfolane **electrolytic** and butyl-rubber sealing material of **electrolytic** capacitor)

IT Cathodes

Electrolytic capacitors

Foils

(sulfolane **electrolytic** and butyl-rubber sealing material of **electrolytic** capacitor)

IT Butyl rubber, uses

(sulfolane **electrolytic** and butyl-rubber sealing material of **electrolytic** capacitor)

IT **Electrolytes**

(sulfolane-based solvent; sulfolane **electrolytic** and butyl-rubber sealing material of **electrolytic** capacitor)

IT 9010-85-9

(butyl rubber, sulfolane **electrolytic** and butyl-rubber sealing material of **electrolytic** capacitor)

IT 126-33-0, Sulfolane 7429-90-5, Aluminum, uses 7440-03-1, Niobium, uses 7440-25-7, Tantalum, uses 7440-32-6, Titanium, uses 7440-67-7, Zirconium, uses 12033-62-4, Tantalum nitride 12648-34-9, Niobium nitride 25583-20-4, Titanium nitride (TiN) 25658-42-8, Zirconium nitride

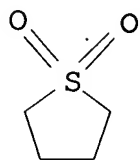
(sulfolane **electrolytic** and butyl-rubber sealing material of **electrolytic** capacitor)

L75 ANSWER 3 OF 13 HCA COPYRIGHT 2007 ACS on STN

137:148861 **Electrolytes** causing suppressed degradation of

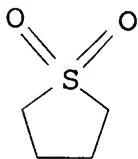
electrode materials and having long service life at high temperature and their **electrolytic** capacitors. Matsuura, Hiroyuki; Tsubaki, Yuichiro; Shimamoto, Hideki (Matsushita Electric Industrial Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002217068 A 20020802, 6 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-8494 20010117.

- AB The **electrolytes** contain (A) sulfolane-nonprotonic polar solvent blends, (B) solutes comprising phthalic acid as an anionic component and amine salts or amidine salts as cationic components, preferably selected from tertiary amine salts, alkyl-substituted amidine group-contg. compds., and/or quaternary ammonium salts of alkyl-substituted amine group-contg. compds. which may be imidazoles, benzimidazoles, and/or alicyclic amidine compds. (pyrimidines, imidazolines), and (C) ammonium hypochlorite. The **electrolytic** capacitors employ the **electrolytes** and sealings of butyl rubber cured with **peroxides** and/or resins and having hardness ≥ 75 RHD at least on a part.
- IT 126-33-0, Sulfolane
(sulfolane-nonprotonic polar solvent blends; **electrolytes** for **electrolytic** capacitors with suppressed degrdn. of electrode materials and long service life at high temp.)
- RN 126-33-0 HCA
- CN Thiophene, tetrahydro-, 1,1-dioxide (CA INDEX NAME)



- IC ICM H01G009-035
ICS H01G009-10
- CC 76-10 (Electric Phenomena)
- ST **electrolyte** sulfolane polar solvent blend; phthalic acid anion amine salt cation **electrolyte**; ammonium hypochlorite **electrolytic** capacitor **electrolyte**; amidine salt cation phthalic acid anion **electrolyte**; **electrolytic** capacitor **electrolyte** soln phthalic acid
- IT Butyl rubber, uses
(cured, capacitor sealing; **electrolytes** for **electrolytic** capacitors with suppressed degrdn. of electrode materials and long service life at high temp.)
- IT **Electrolytic** capacitors
Electrolytic solutions
(**electrolytes** for **electrolytic** capacitors with suppressed degrdn. of electrode materials and long service

- life at high temp.)
- IT 9010-85-9
(butyl rubber, cured, capacitor sealing; **electrolytes** for **electrolytic** capacitors with suppressed degrdn. of electrode materials and long service life at high temp.)
- IT 13932-00-8, Ammonium hypochlorite
(**electrolytes** for **electrolytic** capacitors with suppressed degrdn. of electrode materials and long service life at high temp.)
- IT 88-99-3D, Phthalic acid, amine salts or amidine salts 123155-79-3
167552-54-7, uses
(solute; **electrolytes** for **electrolytic** capacitors with suppressed degrdn. of electrode materials and long service life at high temp.)
- IT 96-48-0, γ -Butyrolactone 126-33-0, Sulfolane
(sulfolane-nonprotonic polar solvent blends; **electrolytes** for **electrolytic** capacitors with suppressed degrdn. of electrode materials and long service life at high temp.)
- L75 ANSWER 4 OF 13 HCA COPYRIGHT 2007 ACS on STN
- 134:353703 Method for manufacture of electrically conductive poly(6-nitroindole). Kaneko, Shinako; Nishiyama, Toshihiko; Fujiwara, Masaki; Harada, Manabu; Kurosaki, Masato; Nakagawa, Yuji (NEC Corp., Japan). Jpn. Kokai Tokkyo Koho JP 2001131266 A 20010515, 6 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1999-319326 19991110.
- AB The polymer is manufd. by dissolving 6-nitroindoline (I) with a support **electrolyte** or an oxidant (e.g., **peroxide**) in a solvent, then **electrolytically** or chem. polymg. the I.
- IT 126-33-0, Sulfolane
(polymn. solvent; method for manuf. of elec. conductive poly(6-nitroindole))
- RN 126-33-0 HCA
- CN Thiophene, tetrahydro-, 1,1-dioxide (CA INDEX NAME)



- IC ICM C08G061-12
ICS C25B003-00; H01B001-12
- CC 35-7 (Chemistry of Synthetic High Polymers)
- ST polynitroindole elec conductive polymer manuf;
electrolytical polymn polynitroindole manuf; oxidative

polymn nitroindoline polynitroindole manuf; electrochem polymer
nitroindoline polynitroindole manuf

IT **Peroxides**, uses

(polymn. catalyst; method for manuf. of elec. conductive
poly(6-nitroindole))

IT **Salts**, uses

(support **electrolytes**; method for manuf. of elec.
conductive poly(6-nitroindole))

IT 7722-84-1, Hydrogen **peroxide**, uses

(method for manuf. of elec. conductive poly(6-nitroindole))

IT 64-17-5, Ethanol, uses 67-56-1, Methanol, uses 67-63-0,
2-Propanol, uses 67-64-1, Acetone, uses 68-12-2, DMF, uses
75-05-8, Acetonitrile, uses 75-52-5, Nitromethane, uses 96-48-0,
 γ -Butyrolactone 96-49-1, Ethylene carbonate 107-13-1,
Acrylonitrile, uses 108-32-7, Propylene carbonate 126-33-0
, Sulfolane

(polymn. solvent; method for manuf. of elec. conductive
poly(6-nitroindole))

L75 ANSWER 5 OF 13 HCA COPYRIGHT 2007 ACS on STN

132:32585 Biomimetic oxidation of diphenyl sulfide with electrochemical
P-450 model system in CH₂Cl₂ treated with alkaline solution.
Michida, Takashi; Osawa, Eriko; Yamaoka, Yumiko (Fac. Pharmaceutical
Sci., Kobe-Gakuin Univ., Ikawadani-cho, Nishi-ku, Kobe, 651-2180,
Japan). Yakugaku Zasshi, 119(10), 780-785 (Japanese) 1999
. CODEN: YKKZAJ. ISSN: 0031-6903. Publisher: Pharmaceutical
Society of Japan.

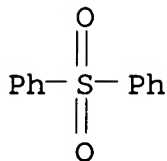
AB Dichloromethane contg. metalloporphyrins [meso-
tetraphenylporphyrinatomanganese(III) chloride (I) or
meso-tetraphenylporphyrinatoiron(III) chloride (II)] and Bu₄NClO₄
was treated with an aq. soln. of NaOH (5%), and subjected to
controlled potential **electrolysis** at -1.00 (vs. S.C.E.
(SCE)) in a divided cell after addn. of di-Ph sulfide (III). Di-Ph
sulfoxide (IV) and di-Ph sulfone (V) were found in an
electrolyzed soln. as the reaction products. Results
obtained from cyclic voltammetry and visible spectrometry suggested
that the treatment of dichloromethane contg. metalloporphyrins with
the aq. soln. of NaOH did not change the fifth ligand of
metalloporphyrins from Cl to OH. On the electrode, dissolved
dioxxygen was reduced to hydrogen **peroxide**. Compds. I and
II catalyze the oxidn. of III by hydrogen **peroxide** without
imidazole. Compd. II showed higher selectivity than compd. I.

IT 127-63-9P, Diphenyl sulfone

(biomimetic oxidn. of di-Ph sulfide with electrochem. P 450 model
system in CH₂Cl₂ treated with alk. soln.)

RN 127-63-9 HCA

CN Benzene, 1,1'-sulfonylbis- (9CI) (CA INDEX NAME)



CC 7-4 (Enzymes)

IT 127-63-9P, Diphenyl sulfone 945-51-7P, Diphenyl sulfoxide
(biomimetic oxidn. of di-Ph sulfide with electrochem. P 450 model
system in CH₂Cl₂ treated with alk. soln.)

L75 ANSWER 6 OF 13 HCA COPYRIGHT 2007 ACS on STN

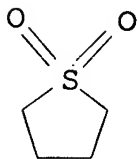
128:23638 Acrylic polyurethane solid **electrolyte**-formable
compositions and manufacture of solid **electrolytes** from
them. Takiyama, Eiichiro; Matsui, Fumio; Morita, Katsuhisa; Takino,
Sachiko; Ogiwara, Kazushige; Takahashi, Kentaro (Showa Highpolymer
Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 09278972 A
19971028 Heisei, 8 pp. (Japanese). CODEN: JKXXAF.
APPLICATION: JP 1996-88529 19960410.

AB The compns. contain (A) monomers having (meth)acryloyl groups and
acetoacetoxy groups in a mol., (B) unsatd. polyurethanes obtained by
reaction of polyester polyols with unsatd. isocyanates, (C) Li
compds., and (D) solvents which can dissolve the Li compds. The
electrolytes are manufd. by polymn. of the above compns.,
which may be previously partially polymd. to control the viscosity,
in a die. The compns. are useful for manuf. of film
batteries. Thus, a compn. contg. AAEM (acetoacetoxyethyl
methacrylate) 100, an unsatd. polyurethane (obtained by reaction of
a polyester polyol from di-Et malonate and ethylene glycol with
isocyanatoethyl methacrylate) 15, propylene carbonate 215, LiBF₄ 33,
and benzoyl **peroxide** 2 parts was casted between 2 Pt
electrode plate and polymd. at 80-100° for 2 h under N flow
to give a soft gelatin-like polymer film with elec. cond. 2.7
+ 10⁻⁴ S/cm.

IT 126-33-0, Sulfolane
(solvent; manuf. of solid **electrolytes** from acrylic
polyurethanes compns. contg. acetoacetoxyethyl (meth)acrylate,
unsatd. polyurethanes, and Li compds.)

RN 126-33-0 HCA

CN Thiophene, tetrahydro-, 1,1-dioxide (CA INDEX NAME)



- IC ICM C08L033-14
ICS C08K003-24; C08L075-14; H01B001-06; H01M006-18; H01M010-40
- CC 37-6 (Plastics Manufacture and Processing)
Section cross-reference(s): 52
- ST acrylic polyester polyurethane solid **electrolyte** lithium;
cast polymn acrylic polyester polyurethane **electrolyte**;
acetoacetoxyethyl acrylate polyurethane polyester lithium
electrolyte; methacrylate acetoacetoxyethyl polyester
polyurethane lithium **electrolyte**
- IT Polymerization
(casting; manuf. of solid **electrolytes** from acrylic
polyurethanes compns. contg. acetoacetoxyethyl (meth)acrylate,
unsatd. polyurethanes, and Li compds.)
- IT **Battery electrolytes**
(manuf. of solid **electrolytes** from acrylic
polyurethanes compns. contg. acetoacetoxyethyl (meth)acrylate,
unsatd. polyurethanes, and Li compds.)
- IT Polyurethanes, preparation
(polyester-, acrylic; manuf. of solid **electrolytes** from
acrylic polyurethanes compns. contg. acetoacetoxyethyl
(meth)acrylate, unsatd. polyurethanes, and Li compds.)
- IT Polyelectrolytes
(solid; manuf. of solid **electrolytes** from acrylic
polyurethanes compns. contg. acetoacetoxyethyl (meth)acrylate,
unsatd. polyurethanes, and Li compds.)
- IT 199115-94-1P 199297-26-2P
(manuf. of solid **electrolytes** from acrylic
polyurethanes compns. contg. acetoacetoxyethyl (meth)acrylate,
unsatd. polyurethanes, and Li compds.)
- IT 7791-03-9, Lithium perchlorate 14024-11-4, Lithium
tetrachloroaluminate 14283-07-9, Lithium tetrafluoroborate
21324-40-3, Lithium hexafluorophosphate 33454-82-9, Lithium
trifluoromethanesulfonate
(manuf. of solid **electrolytes** from acrylic
polyurethanes compns. contg. acetoacetoxyethyl (meth)acrylate,
unsatd. polyurethanes, and Li compds.)
- IT 75-05-8, Acetonitrile, uses 96-48-0, γ -Butyrolactone
108-32-7, Propylene carbonate 110-71-4, 1,2-Dimethoxyethane
126-33-0, Sulfolane
(solvent; manuf. of solid **electrolytes** from acrylic
polyurethanes compns. contg. acetoacetoxyethyl (meth)acrylate,
unsatd. polyurethanes, and Li compds.)

L75 ANSWER 7 OF 13 HCA COPYRIGHT 2007 ACS on STN

128:13756 Acrylic polyurethane solid **electrolyte**-formable
compositions and manufacture of solid **electrolytes** using
them. Takiyama, Eiichiro; Matsui, Fumio; Morita, Katsuhisa; Takino,

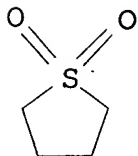
Yukiko; Ogiwara, Kazushige; Takahashi, Kentaro (Showa Highpolymer Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 09278971 A 19971028 Heisei, 8 pp. (Japanese). CODEN: JKXXAF.
APPLICATION: JP 1996-88528 19960410.

AB The compns. contain (A) monomers having (meth)acryloyl groups and acetoacetoxy groups in a mol., (B) unsatd. polyurethanes obtained by reaction of (meth)acryloyl- and OH-having unsatd. polyesters with isocyanates, (C) Li compds., and (D) solvents which can dissolve the Li compds. The **electrolytes** are manufd. by polymn. of the above compns., which may be previously partially polymd. to control the viscosity, in a die. The compns. are useful for manuf. of film **batteries**. Thus, a compn. contg. AAEM (acetoacetoxyethyl methacrylate) 100, an unsatd. polyurethane [obtained by reaction of Placel FM 5 with MOI (isocyanatoethyl methacrylate)] 15, propylene carbonate 185, LiBF₄ 30, and benzoyl **peroxide** 2 parts was casted between 2 Pt electrode plate and polymd. at 80-100° for 2 h under N flow to give a soft gelatin-like polymer film with elec. cond. 2.1×10^{-4} S/cm.

IT 126-33-0, Sulfolane
(solvent; manuf. of solid **electrolytes** from acrylic polyurethanes compns. contg. acetoacetoxyethyl (meth)acrylate, unsatd. polyurethanes, and Li compds.)

RN 126-33-0 HCA

CN Thiophene, tetrahydro-, 1,1-dioxide (CA INDEX NAME)



IC ICM C08L033-14
ICS C08K003-24; C08L075-14; H01B001-06; H01M006-18; H01M010-40
CC 37-6 (Plastics Manufacture and Processing)
Section cross-reference(s): 52
ST acrylic polyurethane solid **electrolyte** lithium salt; cast polymn acrylic polyurethane solid **electrolyte**; acetoacetoxyethyl acrylate polyurethane lithium salt **electrolyte**; methacrylate acetoacetoxyethyl polyurethane lithium salt **electrolyte**
IT Polyurethanes, preparation
(acrylic; manuf. of solid **electrolytes** from acrylic polyurethanes compns. contg. acetoacetoxyethyl (meth)acrylate, unsatd. polyurethanes, and Li compds.)
IT Polymerization
(casting; manuf. of solid **electrolytes** from acrylic polyurethanes compns. contg. acetoacetoxyethyl (meth)acrylate,

- unsatd. polyurethanes, and Li compds.)
- IT **Battery electrolytes**
(manuf. of solid **electrolytes** from acrylic polyurethanes compns. contg. acetoacetoxyethyl (meth)acrylate, unsatd. polyurethanes, and Li compds.)
- IT Polyurethanes, preparation
(polyoxyalkylene-, acrylic; manuf. of solid **electrolytes** from acrylic polyurethanes compns. contg. acetoacetoxyethyl (meth)acrylate, unsatd. polyurethanes, and Li compds.)
- IT Polyelectrolytes
(solid; manuf. of solid **electrolytes** from acrylic polyurethanes compns. contg. acetoacetoxyethyl (meth)acrylate, unsatd. polyurethanes, and Li compds.)
- IT 198956-70-6P, 198956-71-7P
(manuf. of solid **electrolytes** from acrylic polyurethanes compns. contg. acetoacetoxyethyl (meth)acrylate, unsatd. polyurethanes, and Li compds.)
- IT 7791-03-9, Lithium perchlorate 14024-11-4, Lithium tetrachloroaluminate 14283-07-9, Lithium tetrafluoroborate 21324-40-3, Lithium hexafluorophosphate 33454-82-9, Lithium trifluoromethanesulfonate
(manuf. of solid **electrolytes** from acrylic polyurethanes compns. contg. acetoacetoxyethyl (meth)acrylate, unsatd. polyurethanes, and Li compds.)
- IT 75-05-8, Acetonitrile, uses 96-48-0, γ -Butyrolactone 108-32-7, Propylene carbonate 110-71-4, 1,2-Dimethoxyethane 126-33-0, Sulfolane
(solvent; manuf. of solid **electrolytes** from acrylic polyurethanes compns. contg. acetoacetoxyethyl (meth)acrylate, unsatd. polyurethanes, and Li compds.)

L75 ANSWER 8 OF 13 HCA COPYRIGHT 2007 ACS on STN

123:106294 Oxidation of sulfides with electrocatalytic P-450 model system. Michida, Takashi; Kasuya, Yukako; Nishiyama, Michiko; Sayo, Hiroteru (Fac. Pharmaceutical Sciences, Kobe-Gakuin Univ., Kobe, 651-21, Japan). Chemical & Pharmaceutical Bulletin, 42(9), 1724-9 (English) 1994. CODEN: CPBTAL. ISSN: 0009-2363.

Publisher: Pharmaceutical Society of Japan.

AB Controlled potential **electrolysis** (CPE) of meso-tetraphenylporphyrinatomanganese (III) chloride (I) (1 mM) at -0.4 V (vs. SCE) in acetonitrile contg. di-Ph sulfide (II) (100 mM), 1-methylimidazole (5 mM), and tetrabutylammonium perchlorate (0.1 M) as supporting **electrolyte** with a reticulated vitreous carbon (RVC) cathode and bubbling O₂ gas, gave diphenylsulfoxide (III) (12.6%-16.4%) and diphenylsulfone (IV) (0.5%-1.5%) in the presence of acetic acid/or tetramethylammonium hydroxide (V). In the absence of acetic acid or V, compd. II was not oxidized. The results of cyclic voltammetry and CPE at -0.4 V (vs. SCE) showed

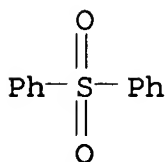
that the oxidant of II was an oxo-manganese (V) species which was generated from I and dissolved dioxygen by two-electron transfer and that the presence of H⁺ was essential not only to cleave the O-O bond in the peroxomanganese species, but also to transfer the second electron. This catalytic cycle is similar to that of cytochrome P 450. The current efficiency was 79.1%. CPE of dissolved O₂ was carried out at -1.0 V in acetonitrile and **superoxide ion** was detected by use of an ESR spectrometer in the frozen **electrolyzed** soln. Addn. of potassium **superoxide** to acetonitrile contg. I, 1-methylimidazole and II gave III (15.6%-26.7%) and IV (0%-2.7%) in the presence of acetic acid or V. A similar procedure in the absence of the acid of V did not give III or IV. When the applied potential was -1.0 V, **superoxide ion** generated by cathodic redn. of dissolved oxygen in the **electrolytic** soln. contg. acetic acid was converted into hydrogen **peroxide** by the reaction with protons. The reaction of manganese (III) porphyrin with hydrogen **peroxide** produced an oxo-manganese (V) species, which is a strong oxidant and oxidized II and III. This mechanism is similar to the shunt mechanism in the cytochrome P 450 catalytic cycle.

IT 127-63-9, Diphenylsulfone 640-57-3
3112-85-4

(oxidn. of sulfides with electrocatalytic cytochrome P 450 model system)

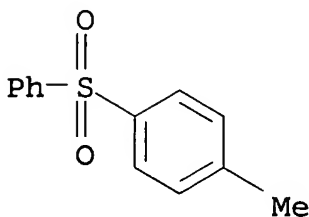
RN 127-63-9 HCA

CN Benzene, 1,1'-sulfonylbis- (9CI) (CA INDEX NAME)



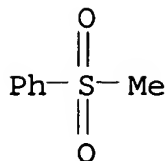
RN 640-57-3 HCA

CN Benzene, 1-methyl-4-(phenylsulfonyl)- (CA INDEX NAME)

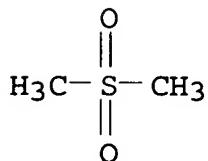


RN 3112-85-4 HCA

CN Benzene, (methylsulfonyl)- (CA INDEX NAME)

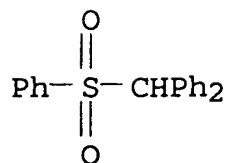


- CC 7-4 (Enzymes)
Section cross-reference(s): 6
- IT 127-63-9, Diphenylsulfone 640-57-3 945-51-7,
Diphenylsulfoxide 948-56-1 1193-82-4 3112-85-4
(oxidn. of sulfides with electrocatalytic cytochrome P 450 model system)
- IT 7722-84-1, Hydrogen peroxide, reactions 11062-77-4,
Superoxide
(oxidn. of sulfides with electrocatalytic cytochrome P 450 model system)
- L75 ANSWER 9 OF 13 HCA COPYRIGHT 2007 ACS on STN
110:123741 Mechanism of iron corrosion in hydrogen peroxide solutions in dimethyl sulfoxide-water mixtures.. Agladze, T. R.; Malysheva, T. G.; Denisova, O. O. (Gruz. Politekh. Inst., Tbilisi, USSR). Zashchita Metallov, 25(1), 29-35 (Russian) 1989. CODEN: ZAMEA9. ISSN: 0044-1856.
- AB The activation of the passive Fe in DMSO-H2O mixt. contg. H2O2 was obsd. during the long contact with the medium. The effect was studied of the acidification of the near-metal part of **electrolyte** and formation of the aggressive products of decompn. of org. radicals formed in the DMSO oxidn. in agreement with the chain mechanism. The neutral and stabilizing compds. can be used to slow down the corrosion rate. The compds. had to be traps for radical particles.
- IT 67-71-0
(iron corrosion in aq. soln. contg. hydrogen peroxide and dimethylsulfoxide and)
- RN 67-71-0 HCA
- CN Methane, sulfonylbis- (9CI) (CA INDEX NAME)



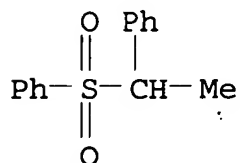
- CC 72-6 (Electrochemistry)
Section cross-reference(s): 55
- ST passive iron activation DMSO water mixt; hydrogen peroxide

- iron corrosion; DMSO oxidn product radical iron corrosion
- IT **Electrolytic** polarization
(of iron, in aq. soln. contg. di-Me sulfoxide and hydrogen
peroxide, corrosion in relation to)
- IT 7722-84-1, Hydrogen **peroxide**, reactions
(corrosion by aq. di-Me sulfoxide and, of iron)
- IT 67-68-5, Dimethyl sulfoxide, reactions
(corrosion by hydrogen **peroxide** and aq., of iron)
- IT 7439-89-6, Iron, reactions
(corrosion of, in di-Me sulfoxide-water soln. contg. hydrogen
peroxide)
- IT 75-75-2, Methanesulfonic acid 624-92-0, Dimethyldisulfide
(iron corrosion in aq. soln. contg. hydrogen **peroxide**
and di-Me sulfoxide and)
- IT 99-35-4, 1,3,5-Trinitrobenzene 2564-83-2 11129-12-7, Borate
(iron corrosion in aq. soln. contg. hydrogen **peroxide**
and di-Me sulfoxide in)
- IT **67-71-0**
(iron corrosion in aq. soln. contg. hydrogen **peroxide**
and dimethylsulfoxide and)
- L75 ANSWER 10 OF 13 HCA COPYRIGHT 2007 ACS on STN
- 100:138373 Electrogenated bases. VI. Reaction of electrogenerated
superoxide with some carbon acids. II. Sugawara, M.;
Baizer, M. M.; Monte, W. T.; Little, R. D.; Hess, U. (Dep. Chem.,
Univ. California, Santa Barbara, CA, 93106, USA). Acta Chemica
Scandinavica, Series B: Organic Chemistry and Biochemistry, B37(6),
509-17 (English) 1983. CODEN: ACBOCV. ISSN: 0302-4369.
- AB Electrogenated O₂- and mol. O reacted sequentially with a no. of
esters, nitriles, N,N-dialkylamides, sulfones and aliph. nitro
compds. The α -Me groups in these compds. bore aliph. and/or
arom. substituents. When the electron-withdrawing group (EWG) of
these C acids could be displaced intact, good-to-excellent yields of
the corresponding carbonyl compds. were obtained. The efficiency of
the transformation depended upon the nature of the substituents:
 α, α -di-Ph > α -methyl- α -Ph >
 α, α -di-Me. Conducting the **electrolysis** in the
presence of Ac₂O showed that the known conversion of PhCH₂CN to BzOH
did indeed proceed via PhCHO. When the EWG itself could be cleaved,
this methodol. produced α -hydroxylated compds. and products
resulting from fragmentation of the EWG and also from its complete
displacement. The effects of the α -substituents were similar
to those above.
- IT **5433-76-1 24422-78-4**
(reaction of, with electrogenerated **superoxide** ion)
- RN 5433-76-1 HCA
- CN Benzene, 1,1'-[(phenylsulfonyl)methylene]bis- (9CI) (CA INDEX NAME)



RN 24422-78-4 HCA

CN Benzene, [(1-phenylethyl)sulfonyl]- (CA INDEX NAME)

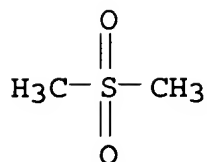


- CC 22-7 (Physical Organic Chemistry)
Section cross-reference(s): 72
- ST **superoxide** electrogenerated reaction carbon acid;
deprotonation carbon acid **superoxide**; ketone; ester
hydroxy; nitrile reaction electrogenerated **superoxide**;
nitro compd reaction **superoxide**
- IT Ketones, preparation
(prepn. of, by reaction of nitriles with electrogenerated
superoxide ion)
- IT Carboxylic acids, preparation
(prepn. of, by reactions of nitriles with electrogenerated
superoxide ion)
- IT Esters, reactions
Nitriles, reactions
Nitro compounds
Sulfones
(reaction of, with electrogenerated **superoxide** ion)
- IT Amides, reactions
(N,N-diethyl-, reaction with electrogenerated **superoxide**
ion)
- IT Acids, reactions
(carbon, reaction of, with electrogenerated **superoxide**
ion)
- IT Protonation and Proton transfer reaction
(deprotonation, of carbon acids with electrogenerated
superoxide ion)
- IT Esters, preparation
(hydroxy, prepn. of, by reaction of esters with electrogenerated
superoxide ion)
- IT 141-28-6
(attempted reaction of, with electrogenerated **superoxide**

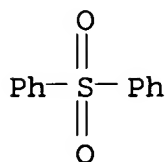
- ion)
IT 109-89-7P, preparation 124-38-9P, preparation 10049-90-8P
13922-28-6P
(prepn. of, by reaction of diethylamide with **superoxide**
ion)
IT 50-21-5P, preparation 76-89-1P 97-64-3P 119-61-9P, preparation
594-61-6P
(prepn. of, by reaction of ester with electrogenerated
superoxide ion)
IT 64-18-6P, preparation 64-19-7P, preparation 65-85-0P,
preparation 67-64-1P, preparation 98-86-2P, preparation
624-83-9P 628-51-3P 827-16-7P 947-94-4P 6284-75-9P
(prepn. of, by reaction of nitrile with electrogenerated
superoxide ion)
IT 109-52-4P, preparation 124-19-6P 2384-50-1P
(prepn. of, by reaction of nitro compd. with electrogenerated
superoxide ion)
IT 25512-62-3P
(prepn. of, by reaction of nitrocyclohexene with electrogenerated
superoxide ion)
IT 75-05-8, reactions 78-82-0 86-29-3 105-37-3 107-12-0
108-64-5 123-25-1 140-29-4 547-63-7 628-05-7 1823-91-2
2216-21-9 2431-96-1 2562-37-0 3004-58-8 3469-00-9
5433-76-1 24422-78-4 33931-44-1 88019-07-2
89333-26-6 89333-27-7
(reaction of, with electrogenerated **superoxide ion**)

L75 ANSWER 11 OF 13 HCA COPYRIGHT 2007 ACS on STN

- 79:12947 Electrochemical manufacture of sulfoxides and sulfones.
Desmarquest, Jean Pierre (Institut Francais du Petrole, des
Carburants et Lubrifiants). Fr. FR 2129028 **19721201**, 12
pp. (French). CODEN: FRXXAK. APPLICATION: FR 1971-8596 19710311.
AB **Electrolysis** of a soln. of an org. sulfide or sulfoxide
between electrodes in the presence of gaseous or dissolved O gave
the sulfoxide or sulfone by oxidn. at the cathode and also by direct
reaction of the org. sulfoxide with **peroxide** generated at
the anode. At 2.8-3 V in MeCN contg. Et4NClO4 and bubbled with O,
Ph2S was converted to Ph2SO. Similarly, in 1:1 HOAc/H2O contg.
NaClO4, Me2S gave Me2SO.
IT **67-71-0P**
(prepn. of, from methyl sulfide, by **electrolysis** in
presence of oxygen)
RN 67-71-0 HCA
CN Methane, sulfonylbis- (9CI) (CA INDEX NAME)



IT 127-63-9P
(prepn. of, from phenyl sulfide, by **electrolysis** in
presence of oxygen)
RN 127-63-9 HCA
CN Benzene, 1,1'-sulfonylbis- (9CI) (CA INDEX NAME)

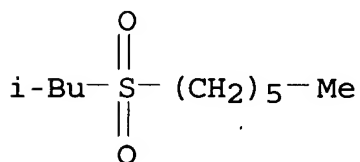


IC C07C; C07B
CC 77-8 (Electrochemistry)
ST electrochem manuf sulfoxide sulfone; sulfide org
electrolysis
IT 67-68-5P, preparation
(from methyl sulide, by **electrolysis** in presence of
oxygen)
IT 67-71-0P
(prepn. of, from methyl sulfide, by **electrolysis** in
presence of oxygen)
IT 127-63-9P 945-51-7P
(prepn. of, from phenyl sulfide, by **electrolysis** in
presence of oxygen)

L75 ANSWER 12 OF 13 HCA COPYRIGHT 2007 ACS on STN
48:25121 Original Reference No. 48:4581c-f Tertiary alkyl
peroxides. (N. V. de Bataafsche Petroleum Maatschappij). GB
688937 19530318 (Unavailable). APPLICATION: GB .
AB A continuous process produces tert-alkyl **peroxides** by
electrolytic synthesis of a **peroxy** acid and
reaction with a tertiary alkylating agent. The latter is a tertiary
alc., tert-alkyl ester of a mineral acid, or a mixt. of an olefin
and an acid which will produce either of these.
Electrolytic cells contg. bright Pt anodes and
Alundum diaphragms to sep. the anolyte and catholyte chambers are
arranged in cascade. The **electrolyte**, a 50% aq. H₂SO₄
soln. contg. about 0.05% HCl, is passed continuously through the

anolyte compartments, residing 1-2 min. in each. The av. cell potential is 12 v., the c.d. 100 amp./sq. dm. anode surface, and the current concn. 750 amp./l. anolyte. A soln. contg. about 21% **peroxysulfuric acid**, 29% H₂SO₄, and 50% water is produced, mixed continuously with 90% H₂SO₄, and passed into a stream of Me₃COH at 75°; after 20 min. residence, the org. layer, contg. more than 99% (Me₃C)₂O₂, is sepd., dried, and neutralized. The tert-alkyl **peroxides** are useful as polymn. catalysts, Diesel fuel additives, and coupling or alkylating agents.

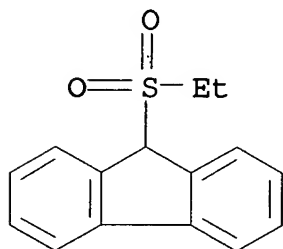
IT 873408-04-9P, Sulfone, hexyl isobutyl
(prepn. of)
RN 873408-04-9 HCA
CN Sulfone, hexyl isobutyl (5CI) (CA INDEX NAME)



CC 10 (Organic Chemistry)
IT Alkylation
(of **peroxy acids** with tertiary alkylating agents, tert-alkyl **peroxides** by)
IT **Peroxy acids**
(reactions of, with tertiary alkylating agents, tert-alkyl **peroxides** by)
IT **Peroxides**
(tert-alkyl)
IT 110-05-4P, tert-Butyl **peroxide**
(manuf. of)
IT 640279-07-8P, Sulfide, hexyl isobutyl 708255-15-6P, 2-Hexanol, 1-(isobutylthio)- 873408-04-9P, Sulfone, hexyl isobutyl
(prepn. of)

L75 ANSWER 13 OF 13 HCA COPYRIGHT 2007 ACS on STN
47:54945 Original Reference No. 47:9342f-g Bis(methylsulfonyl) **peroxide**. Jones, Giffin D.; Friedrich, Ralph E. (Dow Chemical Co.). US 2619507 19521125 (Unavailable).
APPLICATION: US
AB **Electrolysis** between shiny Pt electrodes of 40 ml. of a 10.2N soln. of MeSO₃H at 11°, with a c.d. of 0.2 amp./sq. cm. for 7 hrs. gave 1.06 g. of bis(methylsulfonyl) **peroxide**, (MeSO₂)₂O₂, a water-insol. white powder, m. 77°, decomp. 85°. The **peroxide** was a more active catalyst for low-temp. polymerization of CH₂:CCl₂ or CH₂:CHCl than other **peroxides** previously employed.

IT 60147-56-0P, Fluorene, 9-(ethylsulfonyl)-
 (prepn. of)
 RN 60147-56-0 HCA
 CN 9H-Fluorene, 9-(ethylsulfonyl)- (9CI) (CA INDEX NAME)



CC 10 (Organic Chemistry)
 IT Catalysts
 (in polymerization, of vinyl chloride and vinylidene chloride,
 bis(methylsulfonyl) **peroxide** as)
 IT Polymerization
 (of vinyl and vinylidene chlorides, bis(methylsulfonyl)
peroxide as catalyst in)
 IT 75-01-4, Ethylene, chloro- 75-35-4, Ethylene, 1,1-dichloro-
 (polymerization of, with bis(methylsulfonyl) **peroxide**
 catalyst)
 IT 1001-62-3P, **Peroxide**, bis(methylsulfonyl) 4237-48-3P,
 Methanethiol, diphenyl- 13957-55-6P, Propylamine,
 N,N,1-trimethyl-3,3-diphenyl- 19552-08-0P, 9-Fluorenethiol
 22173-83-7P, Propylamine, N,N,1-trimethyl-3,3-diphenyl-,
 hydrochloride 38793-65-6P, Sulfide, diphenylmethyl propyl
 38793-69-0P, Sulfide, cyclopentyl diphenylmethyl 54160-29-1P,
 Piperidine, 1-[3-(ethylsulfonyl)-3,3-diphenylpropyl]-
 60147-56-0P, Fluorene, 9-(ethylsulfonyl)- 60282-85-1P,
 Pseudourea, 2-diphenylmethyl-2-thio-, hydrochloride 102321-34-6P,
 Propylamine, 3-(ethylsulfonyl)-N,N-dimethyl-3,3-diphenyl-,
 hydrochloride 102759-39-7P, Propylamine, N,N-diethyl-3-
 (ethylsulfonyl)-3,3-diphenyl-, hydrochloride 806599-03-1P,
 Propylamine, N,N-diethyl-3-(ethylsulfonyl)-3,3-diphenyl-
 857523-01-4P, Piperidine, 1-[2-[9-(ethylsulfonyl)-9-fluorenyl]ethyl]-
 872825-90-6P, Piperidine, 1-[3-(methylsulfonyl)-3,3-
 diphenylpropyl]- 872825-92-8P, Piperidine, 1-[3-(isobutylsulfonyl)-
 3,3-diphenylpropyl]- 872825-93-9P, Propylamine,
 3-(isopropylsulfonyl)-N,N,1-trimethyl-3,3-diphenyl- 873375-53-2P,
 Propylamine, N,N,1-trimethyl-3-(methylsulfonyl)-3,3-diphenyl-
 873397-00-3P, Propylamine, 3-(cyclopentylsulfonyl)-N,N,1-trimethyl-
 3,3-diphenyl- 873397-01-4P, Propylamine, 3-(cyclohexylsulfonyl)-
 N,N,1-trimethyl-3,3-diphenyl- 873397-12-7P, Propylamine,
 N,N,1-trimethyl-3,3-diphenyl-3-(propylsulfonyl)- 873406-19-0P,

Piperidine, 1-[4-(ethylsulfonyl)-4,4-diphenylbutyl]-
(prepn. of)

=> D L70 1-8 CBIB ABS HITSTR HITIND

L70 ANSWER 1 OF 8 HCA COPYRIGHT 2007 ACS on STN

146:145946 **Electrolyte** for lithium secondary **battery**

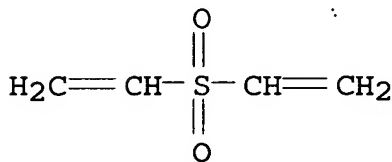
. Kim, Cheonsoo (Samsung Sdi Co., Ltd., S. Korea). U.S. Pat. Appl.
Publ. US 2007009806 A1 20070111, 11pp. (English). CODEN: USXXCO.
APPLICATION: US 2006-481911 20060707. PRIORITY: KR 2005-61409
20050707.

AB The invention concerns an **electrolyte** for a lithium
secondary **battery** and a lithium secondary **battery**
having the **electrolyte**, the **electrolyte**
including a lithium salt; a non-aq. org. solvent including
 γ -butyrolactone-; and a succinic anhydride.

IT 77-77-0, Divinyl sulfone
(**electrolyte** for lithium secondary **battery**)

RN 77-77-0 HCA

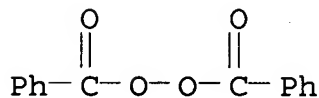
CN Ethene, 1,1'-sulfonylbis- (9CI) (CA INDEX NAME)



IT 94-36-0, Dibenzoyl peroxide, reactions 105-64-6,
Di-isopropyl peroxydicarbonate 105-74-8, Dilauroyl
peroxide 3006-82-4, tert-Butylperoxy-2-ethyl hexanoate
15520-11-3, Bis(4-tert-butylcyclohexyl) peroxydicarbonate
(**electrolyte** for lithium secondary **battery**)

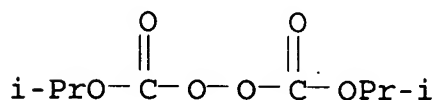
RN 94-36-0 HCA

CN Peroxide, dibenzoyl (9CI) (CA INDEX NAME)



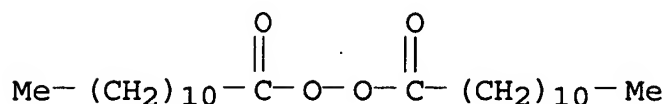
RN 105-64-6 HCA

CN Peroxydicarbonic acid, bis(1-methylethyl) ester (9CI) (CA INDEX
NAME)



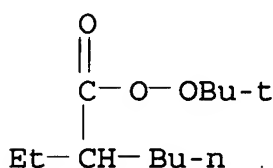
RN 105-74-8 HCA

CN Peroxide, bis(1-oxododecyl) (9CI) (CA INDEX NAME)



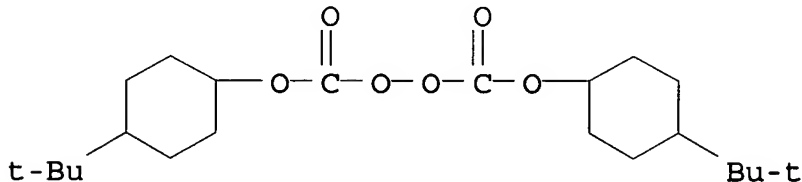
RN 3006-82-4 HCA

CN Hexaneperoxoic acid, 2-ethyl-, 1,1-dimethylethyl ester (CA INDEX NAME)



RN 15520-11-3 HCA

CN Peroxydicarbonic acid, bis[4-(1,1-dimethylethyl)cyclohexyl] ester (9CI) (CA INDEX NAME)



INCL 429329000; 429332000; 429200000

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST **electrolyte** lithium secondary **battery**

IT **Battery electrolytes**

(**electrolyte** for lithium secondary **battery**)

IT Aromatic hydrocarbons, uses

Esters, uses

Ethers, uses

Ketones, uses

(**electrolyte** for lithium secondary **battery**)

IT Secondary **batteries**

(lithium; **electrolyte** for lithium secondary **battery**)

IT 77-77-0, Divinyl sulfone 96-48-0, γ -Butyrolactone

108-30-5, Succinic anhydride, uses 872-36-6, Vinylene carbonate

3741-38-6, Ethylene sulfite 25721-76-0, Poly(ethylene

glycol)dimethacrylate 26570-48-9, Poly(ethylene glycol)diacrylate

49717-87-5, uses 919110-87-5

(electrolyte for lithium secondary battery)

IT 94-36-0, Dibenzoyl peroxide, reactions 105-64-6,
Di-isopropyl peroxydicarbonate 105-74-8, Dilauroyl
peroxide 107-71-1, tert-Butyl peroxy acetate 109-13-7,
tert-Butyl peroxy isobutyrate 110-22-5, Diacetyl peroxide
614-45-9, tert-Butyl peroxy benzoate 686-31-7, tert-Amylperoxy
2-ethyl hexanoate 927-07-1, tert-Butyl peroxy pivalate 2372-21-6,
tert-Butyl peroxy isopropyl carbonate 3006-82-4,
tert-Butylperoxy-2-ethyl hexanoate 3851-87-4, Bis(3,5,5-
trimethylhexanoyl) peroxide 13122-18-4 15518-51-1, Diethylene
glycol bis(tert-butyl peroxy carbonate) 15520-11-3,
Bis(4-tert-butylcyclohexyl) peroxydicarbonate 16111-62-9,
Di-2-ethylhexyl peroxy dicarbonate 26748-38-9, tert-Butyl peroxy
neoheptanoate 29240-17-3, tert-Amyl peroxy pivalate 34443-12-4,
tert-Butyl peroxy-2-ethylhexyl carbonate 36536-42-2 51938-28-4,
tert-Hexyl peroxy pivalate 52238-68-3 68860-54-8 919110-90-0

(electrolyte for lithium secondary battery)

IT 71-43-2, Benzene, uses 78-67-1, 2,2'-Azo-bis(isobutyronitrile)
96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate
108-32-7, Propylene carbonate 108-67-8, Mesitylene, uses
108-86-1, Bromobenzene, uses 108-88-3, Toluene, uses 108-90-7,
Chlorobenzene, uses 462-06-6, Fluorobenzene 463-79-6D, Carbonic
acid, ester 616-38-6, Dimethyl carbonate 623-53-0, EthylMethyl
carbonate 623-96-1, Dipropyl carbonate 1330-20-7, Xylene, uses
2094-98-6 4419-11-8, 2,2'-Azo-bis(2,4-dimethyl valerionitrile)
4437-70-1, 2,3-Butylene carbonate 4437-85-8, 1,2-Butylene
carbonate 4437-86-9 7447-41-8, Lithium chloride, uses
7791-03-9, Lithium perchlorate 10377-51-2, Lithium iodide
14024-11-4, Lithium tetrachloroaluminate 14283-07-9, Lithium
tetrafluoroborate 18424-17-4, Lithium hexafluoroantimonate
21324-40-3, Lithium hexafluorophosphate 29935-35-1, Lithium
hexafluoroarsenate 33454-82-9, Lithium triflate 35363-40-7,
Ethylpropyl carbonate 37220-89-6, Aluminum lithium oxide
56525-42-9, Methylpropyl carbonate 89489-56-5, 1,2-Pentylene
carbonate 90076-65-6 114435-02-8, Fluoroethylene carbonate
131651-65-5

(electrolyte for lithium secondary battery)

L70 ANSWER 2 OF 8 HCA COPYRIGHT 2007 ACS on STN

142:264348 **Electrolyte** for rechargeable lithium

battery. Lee, Yong-Beom; Song, Eui-Hwan; Kim, Kwang-Sup;
Earmme, Tae-Shik; Kim, You-Mee (Samsung SDI Co., Ltd., S. Korea).
Eur. Pat. Appl. EP 1508934 A1 20050223, 32 pp. DESIGNATED STATES:
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR.
(English). CODEN: EPXXDW. APPLICATION: EP 2004-90320 20040819.
PRIORITY: KR 2003-57716 20030820; KR 2004-5874 20040129.

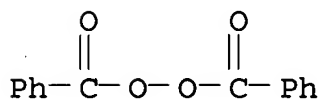
AB Disclosed is an **electrolyte** for a rechargeable lithium

battery, including a mixt. of org. solvents including a cyclic solvent and a nitrile-based solvent represented by the formula $R-C \equiv N$ (R is from C1-10 aliph. hydrocarbons, C1-10 halogenated aliph. hydrocarbons, C6-10 arom. hydrocarbons, and C6-10 halogenated arom. hydrocarbons) and a lithium salt.

IT 94-36-0, Dibenzoyl peroxide, processes 105-74-8, Dilauroyl peroxide 3006-82-4, tert-Butyl peroxy-2-ethyl hexanoate 15520-11-3, Di(4-tert-butylcyclohexyl)peroxydicarbonate 26748-41-4, tert-Butyl peroxy neodecanoate
(electrolyte for rechargeable lithium battery)

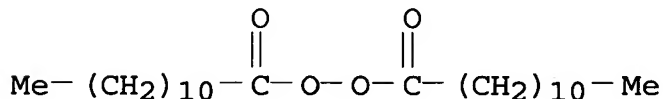
RN 94-36-0 HCA

CN Peroxide, dibenzoyl (9CI) (CA INDEX NAME)



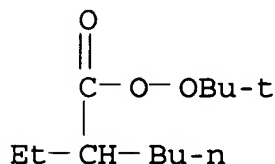
RN 105-74-8 HCA

CN Peroxide, bis(1-oxododecyl) (9CI) (CA INDEX NAME)



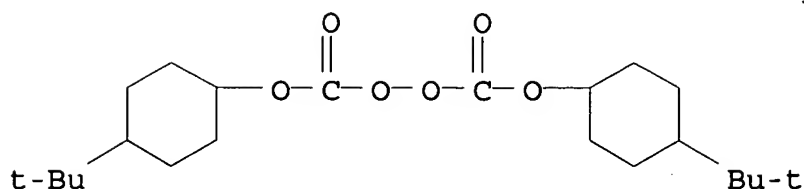
RN 3006-82-4 HCA

CN Hexaneperoxoic acid, 2-ethyl-, 1,1-dimethylethyl ester (CA INDEX NAME)



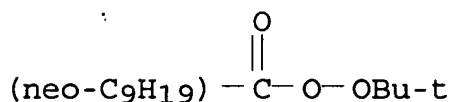
RN 15520-11-3 HCA

CN Peroxydicarbonic acid, bis[4-(1,1-dimethylethyl)cyclohexyl] ester (9CI) (CA INDEX NAME)



RN 26748-41-4 HCA

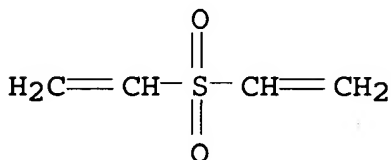
CN Neodecaneperoxoic acid, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



IT 77-77-0, DiVinyl sulfone 105-64-6,
Di-isopropylperoxydicarbonate
(electrolyte for rechargeable lithium battery
)

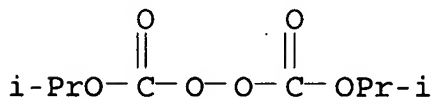
RN 77-77-0 HCA

CN Ethene, 1,1'-sulfonylbis- (9CI) (CA INDEX NAME)



RN 105-64-6 HCA

CN Peroxydicarbonic acid, bis(1-methylethyl) ester (9CI) (CA INDEX NAME)



IC ICM H01M010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38

ST electrolyte rechargeable lithium battery

IT Nitriles, uses

(aliph., C1-10; electrolyte for rechargeable lithium
battery)

- IT Nitriles, uses
(arom., C6-10; **electrolyte** for rechargeable lithium battery)
- IT Battery electrolytes
(**electrolyte** for rechargeable lithium battery)
- IT Lactones
(**electrolyte** for rechargeable lithium battery)
- IT Secondary batteries
(lithium; **electrolyte** for rechargeable lithium battery)
- IT Peroxides, uses
(org.; **electrolyte** for rechargeable lithium battery)
- IT 94-36-0, Dibenzoyl peroxide, processes 105-74-8, Dilauroyl peroxide 107-71-1, tert-Butylperoxy acetate 109-13-7, tert-Butylperoxyisobutyrate 110-22-5, Diacetyl peroxide 614-45-9, tert-Butylperoxy benzoate 686-31-7, tert-Amylperoxy 2-ethylhexanoate 927-07-1, tert-Butyl peroxy pivalate, 2372-21-6, tert-Butyl peroxy isopropyl carbonate 3006-82-4, tert-Butyl peroxy-2-ethyl hexanoate 3851-87-4, Bis(3,5,5-trimethyl)hexanoyl peroxide 4419-11-8, 2,2'-Azobis(2,4-dimethylvaleronitrile) 13122-18-4, tert-Butylperoxy 3,5,5-trimethylhexanoate 15518-51-1, Diethylene glycol bis(tert-butylperoxycarbonate) 15520-11-3, Di(4-tert-butylcyclohexyl)peroxydicarbonate 25551-14-8, 26748-38-9, tert-Butyl peroxy neoheptanoate 26748-41-4, tert-Butyl peroxy neodecanoate 29240-17-3, tert-Amyl peroxy pivalate 34443-12-4, tert-Butyl peroxy 2-ethylhexyl carbonate 36536-42-2, 1,6-Hexanediol bis(tert-butyl peroxy carbonate) 51240-95-0, 1,1,3,3-Tetramethylbutyl peroxy neodecanoate 51938-28-4, tert-Hexylperoxy pivalate 52238-68-3, Bis(3-methoxybutyl) peroxydicarbonate 68860-54-8 96989-15-0 845717-44-4
(**electrolyte** for rechargeable lithium battery)
- IT 79-20-9, Methyl acetate 96-48-0, γ -Butyrolactone 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 106-70-7, Methyl hexanoate 107-12-0, Propionitrile 107-31-3, Methyl formate 108-29-2, γ -Valerolactone 108-32-7, Propylene carbonate 109-74-0, Butyronitrile 110-59-8, Valeronitrile 124-12-9, Caprylonitrile 140-29-4, Phenylacetoneitrile 141-78-6, Ethyl acetate, uses 326-62-5, 2-FluoroPhenylacetoneitrile 394-47-8, 2-Fluorobenzonitrile 459-22-3, 4-FluoroPhenylacetoneitrile 502-44-3, ϵ -Caprolactone 542-28-9, δ -Valerolactone 542-52-9, Dibutyl carbonate 616-38-6, Dimethyl carbonate 623-53-0, Ethyl methyl carbonate 623-96-1, Dipropyl carbonate

629-08-3, Heptanenitrile 630-18-2, tert-Butyl cyanide 695-06-7,
γ-Caprolactone 766-05-2, Cyclohexanecarbonitrile
1194-02-1, 4-Fluorobenzonitrile 4254-02-8,
Cyclopentanecarbonitrile 4437-85-8, Butylene carbonate
7439-93-2D, Lithium, salt 7791-03-9, Lithium perchlorate
12190-79-3, Cobalt lithium oxide (CoLiO₂) 14024-11-4, Lithium
tetrachloroaluminate 14283-07-9, Lithium tetrafluoroborate
18424-17-4, Lithium hexafluoroantimonate 21324-40-3, Lithium
hexafluorophosphate 29935-35-1, Lithium hexafluoroarsenate
33454-82-9, Lithium triflate 57381-51-8, 4-Chloro-2-fluoro-
benzonitrile 60702-69-4, 2-Chloro-4-fluoro-benzonitrile
90076-65-6 90240-74-7 127813-79-0 132843-44-8 179802-95-0,
Cobalt lithium manganese nickel oxide (Co_{0.1}LiMn_{0.1}Ni_{0.8}O₂)
845717-45-5

(electrolyte for rechargeable lithium battery

)

IT 75-05-8, Acetonitrile, uses 77-77-0, DiVinyl sulfone
105-64-6, Di-isopropylperoxydicarbonate 628-73-9,
Capronitrile 872-36-6, Vinylene carbonate 3741-38-6, Ethylene
sulfite 16111-62-9, Bis(2-ethylhexyl) peroxydicarbonate
22537-94-6 71331-99-2, Bis(4-tert-butylcyclohexyl)peroxycarbonate
114435-02-8, Fluoroethylene carbonate

(electrolyte for rechargeable lithium battery

)

L70 ANSWER 3 OF 8 HCA COPYRIGHT 2007 ACS on STN

140:256340 Anodes for lithium battery. Kim, Yong-tae; Choi,
Su-suk; Choi, Yun-suk; Lee, Kyoung-hee (Samsung Sdi Co., Ltd., S.
Korea). U.S. Pat. Appl. Publ. US 2004058232 A1 20040325, 10 pp.
(English). CODEN: USXXCO. APPLICATION: US 2003-664157 20030917.
PRIORITY: KR 2002-57577 20020923.

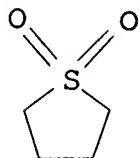
AB A lithium neg. electrode for a lithium battery has good
cycle life and capacity characteristics. The lithium neg. electrode
comprises a lithium metal layer and a protective layer present on
the lithium metal layer, where the protective layer includes an
organosulfur compd. An organosulfur compd. having a thiol terminal
group is preferred since such a compd. can form a complex with
lithium metal to enable coating to be carried out easily. The
organosulfur compd. has a large no. of S or N elements having high
electronegativity to form a complex with lithium ions, so it renders
lithium ions to be deposited relatively evenly on the lithium metal
surface, reducing dendrite formation.

IT 126-33-0, Sulfolane

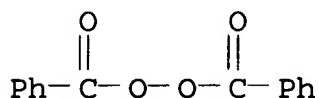
(anodes for lithium battery)

RN 126-33-0 HCA

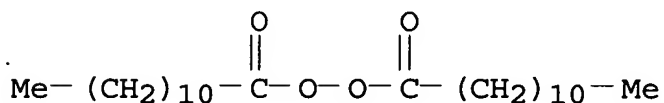
CN Thiophene, tetrahydro-, 1,1-dioxide (CA INDEX NAME)



IT 94-36-0, Dibenzoyl peroxide, uses 105-74-8,
Dilauroyl peroxide
(anodes for lithium **battery**)
RN 94-36-0 HCA
CN Peroxide, dibenzoyl (9CI) (CA INDEX NAME)



RN 105-74-8 HCA
CN Peroxide, bis(1-oxododecyl) (9CI) (CA INDEX NAME)



IC ICM H01M002-16
ICS H01M004-66; H01M004-40
INCL 429137000; 429246000; 429245000; 429212000; 429231950
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
ST anode lithium **battery**
IT Chalcogenides
Oxides (inorganic), uses
(Li-contg.; anodes for lithium **battery**)
IT Peroxides, uses
(acyl; anodes for lithium **battery**)
IT Hydroperoxides
(alkyl, tertiary; anodes for lithium **battery**)
IT Peroxides, uses
(alkyl; anodes for lithium **battery**)
IT **Battery** anodes
Coating materials
Conducting polymers
(anodes for lithium **battery**)
IT Acrylic polymers, uses
Polyanilines

Polyoxyalkylenes, uses
(anodes for lithium **battery**)

IT Amino acids, uses
Halogens
Lewis acids
Rare earth chlorides
Sulfonic acids, uses
Transition metal compounds
(dopant; anodes for lithium **battery**)

IT Primary **batteries**
Secondary **batteries**
(lithium; anodes for lithium **battery**)

IT Esters, uses
Ketals
(peroxy; anodes for lithium **battery**)

IT Crown ethers
Polybenzimidazoles
Polyquinolines
Polyquinoxalines
(thiophenes, polymers; anodes for lithium **battery**)

IT 110-71-4 111-96-6, Diglyme 126-33-0, Sulfolane
646-06-0, 1,3-Dioxolane 7439-93-2, Lithium, uses 7704-34-9,
Sulfur, uses
(anodes for lithium **battery**)

IT 67-63-0, Isopropyl alcohol, uses 75-91-2, tert-Butyl hydroperoxide
78-63-7, 2,5-Dimethyl-2,5-di-(tert-butylperoxy)hexane 78-67-1,
Azobisisobutyronitrile 80-15-9, Cumene hydroperoxide 80-43-3,
Dicumyl peroxide 94-36-0, Dibenzoyl peroxide, uses
105-74-8, Dilauroyl peroxide 110-05-4, Di-tert-butyl
peroxide 123-23-9, Succinic acid peroxide 762-12-9, Didecanoyl
peroxide 927-07-1, tert-Butylperoxypivalate 2167-23-9,
2,2-Di-(tert-butylperoxy)butane 3025-88-5, 2,5-Dihydroperoxy-2,5-
dimethylhexane 4511-39-1, tert-Amylperoxybenzoate 15667-10-4,
1,1-Di-(tert-amylperoxy)cyclohexane 16066-38-9, Di(n-propyl)peroxy
dicarbonate 16111-62-9, Di(2-ethylhexyl)peroxy dicarbonate
19910-65-7, Di(sec-butyl)peroxy dicarbonate 24937-05-1,
Poly(ethyleneadipate) 24938-43-0, Poly(β -propiolactone)
24969-06-0, Polyepichlorohydrin 25190-62-9, Poly(p-phenylene)
25233-30-1, Polyaniline 25233-30-1D, Polyaniline, sulfonated
25233-34-5, Polythiophene 25233-34-5D, Polythiophene, derivs.
25322-68-3, Peo 25322-69-4, Polypropylene oxide 25667-11-2,
Poly(ethylenesuccinate) 25721-76-0, Polyethylene glycol
dimethacrylate 25852-49-7, Polypropylene glycol dimethacrylate
26570-48-9, Poly(ethylene glycol diacrylate) 26748-47-0,
 α -Cumylperoxyneodecanoate 34099-48-4, Peroxydicarbonate
52496-08-9, Poly(propyleneglycoldiacrylate) 55794-20-2, Ethyl
3,3-di-(tert-butylperoxy)butyrate 95732-35-7 97332-10-0,
Poly(N-propylaziridine) 139096-57-4, Isoquinoline homopolymer

172973-34-1

(anodes for lithium **battery**)

IT 865-44-1, Iodine trichloride 1493-13-6, Triflic acid 7446-11-9, Sulfur trioxide, uses 7550-45-0, Titanium chloride (TiCl₄) (T-4)-, uses 7553-56-2, Iodine, uses 7601-90-3, Perchloric acid, uses 7637-07-2, uses 7647-01-0, Hydrochloric acid, uses 7647-19-0, Phosphorus pentafluoride 7664-39-3, Hydrofluoric acid, uses 7664-93-9, Sulfuric acid, uses 7697-37-2, Nitric acid, uses 7705-08-0, Ferric chloride, uses 7721-01-9, Tantalum chloride (TaCl₅) 7726-95-6, Bromine, uses 7782-44-7, Oxygen, uses 7782-50-5, Chlorine, uses 7783-68-8, Niobium fluoride nbf5 7783-70-2, Antimony pentafluoride 7783-81-5 7783-82-6 7783-93-9, Silver perchlorate 7784-36-3, Arsenic pentafluoride 7789-21-1, Fluorosulfonic acid 7789-33-5, Iodine monobromide 7790-94-5, Chlorosulfonic acid 7790-99-0, Iodine monochloride 10026-11-6 10026-12-7, Niobium chloride (NbCl₅) 10277-43-7, Lanthanum nitrate hexahydrate 10294-33-4, Boron tribromide 10294-34-5 13283-01-7 13499-05-3 13709-32-5, Bis(fluorosulfonyl)peroxide 13774-85-1 13819-84-6, Molybdenum fluoride mof5 13870-10-5, Iron chloride oxide feocl 13873-84-2, Iodine monofluoride 14635-75-7, Nitrosyl tetrafluoroborate 14797-73-0, Perchlorate 14874-70-5, Tetrafluoroborate 16871-80-0, Nitrosyl hexachloroantimonate 16887-00-6, Chloride, uses 16919-18-9, Hexafluorophosphate 16941-92-7, Hexachloroiridic acid 16973-45-8, Hexafluoroarsenate 17111-95-4 17856-92-7 20461-54-5, Iodide, uses 24959-67-9, Bromide, uses 25321-43-1, Octylbenzenesulfonic acid 27176-87-0, Dodecylbenzene sulfonic acid

(dopant; anodes for lithium **battery**)

IT 540-63-6, 1,2-Ethanedithiol 1072-71-5, 2,5-Dimercapto-1,3,4-thiadiazole 2001-93-6, 2,4-Dimercaptopyrimidine 2150-02-9, Bis(2-mercaptoethyl)ether 3570-55-6, Bis(2-mercaptoethyl)sulfide 9002-98-6 9002-98-6D, derivs. 37306-44-8D, Triazole, mecapto derivs 131538-50-6 135886-78-1 135886-79-2

(protective coating; anodes for lithium **battery**)

IT 7704-34-9D, Sulfur, organosulfur compd.

(protective layer; anodes for lithium **battery**)

IT 273-77-8, 1,2,3-Benzothiadiazole 612-79-3, 6,6'-Biquinoline 25013-01-8, Polypyridine 25013-01-8D, Polypyridine, derivs. 26856-35-9, Dihydrophenanthrene 27986-50-1, Poly(1,3-cyclohexadiene) 30604-81-0, Polypyrrole 30604-81-0D, Polypyrrole, derivs. 51937-67-8, Polyferrocene 71730-08-0, Polyanthraquinone 136902-52-8, 2,2'-Bipyridine homopolymer 136902-52-8D, 2,2'-Bipyridine homopolymer, derivs. 190201-51-5, Pyrimidine homopolymer 190201-57-1, 1,5-Naphthyridine homopolymer (thiophenes, polymers; anodes for lithium **battery**)

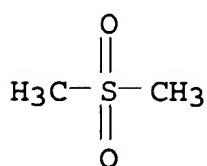
140:238483 **Electrolyte** for a lithium battery. Park, Yong-Chul; Jung, Won-Ii; Kim, Geun-Bae; Cho, Jae-Phil; Jung, Cheol-Soo (S. Korea). U.S. Pat. Appl. Publ. US 2004048163 A1 20040311, 13 pp. (English). CODEN: USXXCO. APPLICATION: US 2003-656086 20030905. PRIORITY: KR 2002-53879 20020906.

AB An **electrolyte** for a lithium battery includes a nonaq. org. solvent, a lithium salt, and an additive comprising (a) a sulfone-based compd. and (b) a C3-30 org. peroxide or azo-based compd. The **electrolyte** may further include a poly(ester)(meth)acrylate or a polymer that is derived from a (polyester)polyol with at least three hydroxyl (-OH) groups, where a portion or all of the hydroxyl groups are substituted with a (meth)acrylic ester and the remaining hydroxyl groups that are not substituted with the (meth)acrylic ester are substituted with a group having no radical reactivity. The lithium battery comprising the **electrolyte** of the present invention has a significantly improved charge-discharge and cycle life characteristics, recovery capacity ratio at high temp., and swelling inhibition properties.

IT 67-71-0, Methyl sulfone 77-77-0, Vinyl sulfone 94-36-0, Benzoyl peroxide, uses 105-64-6, Diisopropyl peroxy dicarbonate 105-74-8, Lauroyl peroxide 126-33-0, Tetramethylene sulfone 127-63-9, Phenyl sulfone 620-32-6, Benzyl sulfone 1561-49-5, Dicyclohexylperoxy dicarbonate 1712-87-4, m-Toluoyl peroxide 3006-82-4, tert-Butylperoxy-2-ethyl hexanoate 14666-78-5 15520-11-3, Bis(4-tert-butylcyclohexyl)peroxy dicarbonate 26748-41-4 32752-09-3, Isobutyl peroxide 92177-99-6, 3,3,5-Trimethylhexanoyl peroxide (electrolyte for lithium battery)

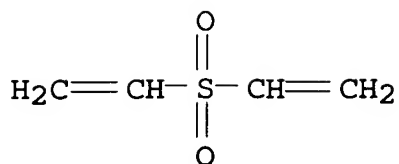
RN 67-71-0 HCA

CN Methane, sulfonylbis- (9CI) (CA INDEX NAME)

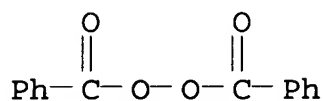


RN 77-77-0 HCA

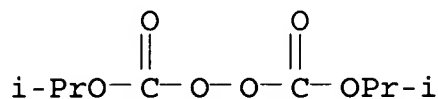
CN Ethene, 1,1'-sulfonylbis- (9CI) (CA INDEX NAME)



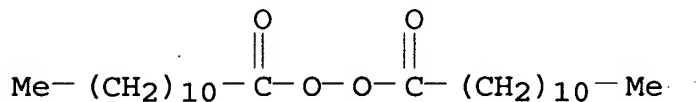
RN 94-36-0 HCA
 CN Peroxide, dibenzoyl (9CI) (CA INDEX NAME)



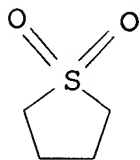
RN 105-64-6 HCA
 CN Peroxydicarbonic acid, bis(1-methylethyl) ester (9CI) (CA INDEX NAME)



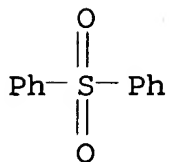
RN 105-74-8 HCA
 CN Peroxide, bis(1-oxododecyl) (9CI) (CA INDEX NAME)



RN 126-33-0 HCA
 CN Thiophene, tetrahydro-, 1,1-dioxide (CA INDEX NAME)

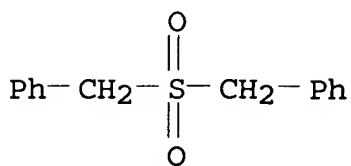


RN 127-63-9 HCA
 CN Benzene, 1,1'-sulfonylbis- (9CI) (CA INDEX NAME)



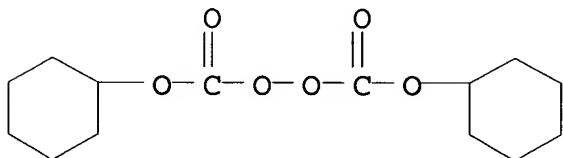
RN 620-32-6 HCA

CN Benzene, 1,1'-[sulfonylbis(methylene)]bis- (9CI) (CA INDEX NAME)



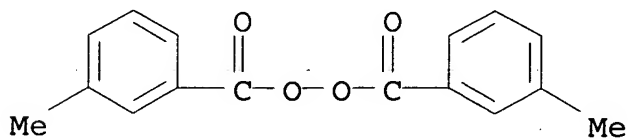
RN 1561-49-5 HCA

CN Peroxydicarbonic acid, dicyclohexyl ester (6CI, 8CI, 9CI) (CA INDEX NAME)



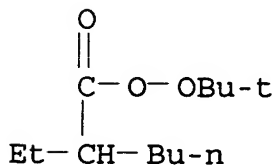
RN 1712-87-4 HCA

CN Peroxide, bis(3-methylbenzoyl) (9CI) (CA INDEX NAME)

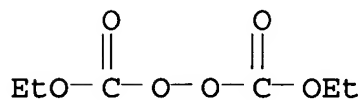


RN 3006-82-4 HCA

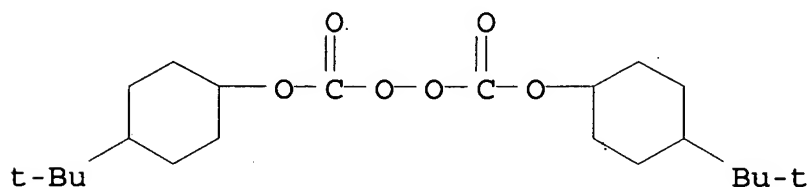
CN Hexaneperoxoic acid, 2-ethyl-, 1,1-dimethylethyl ester (CA INDEX NAME)



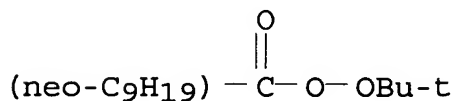
RN 14666-78-5 HCA
 CN Peroxydicarbonic acid, diethyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



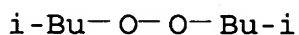
RN 15520-11-3 HCA
 CN Peroxydicarbonic acid, bis[4-(1,1-dimethylethyl)cyclohexyl] ester (9CI) (CA INDEX NAME)



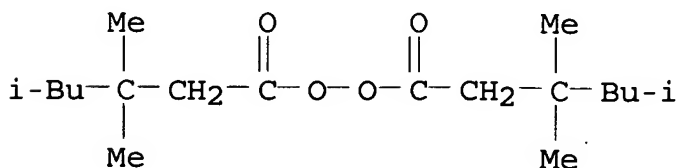
RN 26748-41-4 HCA
 CN Neodecaneperoxoic acid, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



RN 32752-09-3 HCA
 CN Peroxide, bis(2-methylpropyl) (CA INDEX NAME)



RN 92177-99-6 HCA
 CN Peroxide, bis(3,3,5-trimethyl-1-oxohexyl) (9CI) (CA INDEX NAME)



IC ICM H01M010-40

INCL 429326000; 429329000; 429339000; 429340000
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
ST lithium **battery electrolyte**
IT **Battery electrolytes**
(**electrolyte** for lithium **battery**)
IT Aromatic hydrocarbons, uses
Carbonates, uses
Esters, uses
Ethers, uses
Ketones, uses
(**electrolyte** for lithium **battery**)
IT Azo compounds
(**electrolyte** for lithium **battery**)
IT Carbonaceous materials (technological products)
(**electrolyte** for lithium **battery**)
IT Sulfones
(**electrolyte** for lithium **battery**)
IT Polyesters, uses
(hydroxy-terminated; **electrolyte** for lithium
battery)
IT Secondary **batteries**
(lithium; **electrolyte** for lithium **battery**)
IT Polyesters, uses
(methacrylate; **electrolyte** for lithium **battery**
)
IT Peroxides, uses
(org., C3-30; **electrolyte** for lithium **battery**
)
IT Esters, uses
(poly-; **electrolyte** for lithium **battery**)
IT Imides
Sulfonic acids, uses
(sulfonimides, perfluoro derivs., lithium salts;
electrolyte for lithium **battery**)
IT 56-81-5, Glycerol, uses 71-43-2, Benzene, uses 96-49-1, Ethylene
carbonate 98-95-3, Nitrobenzene, uses 105-58-8, Diethyl
carbonate 108-32-7, Propylene carbonate 108-88-3, Toluene, uses
108-90-7, Chlorobenzene, uses 149-32-6, Erythritol 462-06-6,
Fluorobenzene 616-38-6, Dimethyl carbonate 623-53-0, Methylene
carbonate 623-96-1, Dipropyl carbonate 1330-20-7, Xylene, uses
4437-85-8, Butylene carbonate 7790-99-0, Iodine chloride (ICl)
7791-03-9, Lithium perchlorate 10377-51-2, Lithium iodide (LiI)
14024-11-4, Lithium tetrachloroaluminate 14283-07-9, Lithium
tetrafluoroborate 18424-17-4, Lithium hexafluoroantimonate
21324-40-3, Lithium hexafluorophosphate 27359-10-0,
Trifluorotoluene 29935-35-1, Lithium hexafluoroarsenate
33454-82-9, Lithium triflate 35363-40-7, Ethyl propyl carbonate,

uses 39300-70-4, Lithium nickel oxide 56525-42-9, Methyl propyl carbonate, uses 90076-65-6 131651-65-5, Lithium nonafluorobutanesulfonate 162684-16-4, Lithium manganese nickel oxide 193215-00-8, Cobalt lithiummanganese nickel oxide $\text{Co}_0.1\text{LiMn}_0.2\text{Ni}_0.7\text{O}_2$

(electrolyte for lithium battery)

IT 67-71-0, Methyl sulfone 77-77-0, Vinyl sulfone 78-67-1, 2,2'-Azobisisobutyronitrile 94-36-0, Benzoyl peroxide, uses 105-64-6, Diisopropyl peroxy dicarbonate 105-74-8, Lauroyl peroxide 126-33-0, Tetramethylene sulfone 127-63-9, Phenyl sulfone 620-32-6, Benzyl sulfone 1561-49-5, Dicyclohexylperoxy dicarbonate 1712-87-4, m-Toluoyl peroxide 3006-82-4, tert-Butylperoxy-2-ethyl hexanoate 14666-78-5 15520-11-3, Bis(4-tert-butylcyclohexyl)peroxy dicarbonate 26748-41-4 28452-93-9, Butadiene sulfone 32752-09-3, Isobutyl peroxide 92177-99-6, 3,3,5-Trimethylhexanoyl peroxide

(electrolyte for lithium battery)

IT 79-10-7DP, Acrylic acid, reaction product with dipentaerythritol and ϵ -caprolactone and butylcarbonic acid 126-58-9DP, Dipentaerythritol, reaction product with ϵ -caprolactone and acrylic acid and butylcarbonic acid 502-44-3DP, ϵ -Caprolactone, reaction product with dipentaerythritol and acrylic acid and butylcarbonic acid 10411-26-4DP, MonoButylcarbonate, reaction product with dipentaerythritol and ϵ -caprolactone and acrylic acid

(electrolyte for lithium battery)

L70 ANSWER 5 OF 8 HCA COPYRIGHT 2007 ACS on STN

140:149224 Nonaqueous **electrolytic** solution with improved safety for lithium **battery**. Kim, Jun-ho; Lee, Ha-young; Choy, Sang-hoon; Kim, Ho-sung (Samsung SDI Co., Ltd., S. Korea). U.S. Pat. Appl. Publ. US 2004029018 A1 20040212, 12 pp. (English). CODEN: USXXCO. APPLICATION: US 2003-637554 20030811. PRIORITY: KR 2002-47510 20020812.

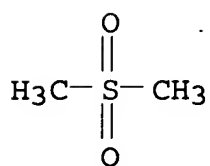
AB A nonaq. **electrolytic** soln. and a lithium **battery** employing the same include a lithium salt, an org. solvent, and a halogenated benzene compd. The use of the nonaq. **electrolytic** soln. causes formation of a polymer by oxidative decompn. of the **electrolytic** soln. even if a sharp voltage increase occurs due to overcharging of the **battery**, leading to consumption of an overcharge current, thus protecting the **battery**.

IT 67-71-0, Methyl sulfone 77-77-0, Vinyl sulfone 94-36-0, Benzoylperoxide, uses 105-64-6, Diisopropyl peroxy dicarbonate 105-74-8, Lauroyl peroxide 126-33-0, Tetramethylene sulfone 127-63-9, Phenyl

sulfone 620-32-6, Benzyl sulfone 1561-49-5,
 Dicyclohexyl peroxy dicarbonate 1712-87-4, m-Toluoyl
 peroxide 3006-82-4, tert-Butylperoxy-2-ethylhexanoate
 14666-78-5 15520-11-3, Bis(4-tert-butylcyclohexyl)
 peroxydicarbonate 32752-09-3, Isobutyl peroxide
 92177-99-6, 3,3,5-Trimethylhexanoylperoxide
 (nonaq. electrolytic soln. with improved safety for
 lithium battery)

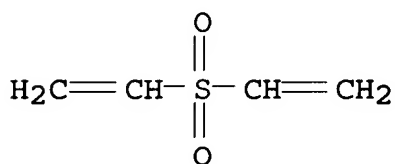
RN 67-71-0 HCA

CN Methane, sulfonylbis- (9CI) (CA INDEX NAME)



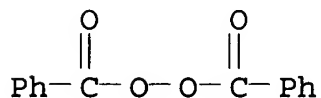
RN 77-77-0 HCA

CN Ethene, 1,1'-sulfonylbis- (9CI) (CA INDEX NAME)



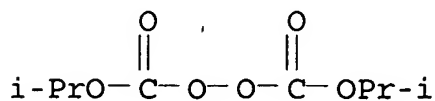
RN 94-36-0 HCA

CN Peroxide, dibenzoyl (9CI) (CA INDEX NAME)



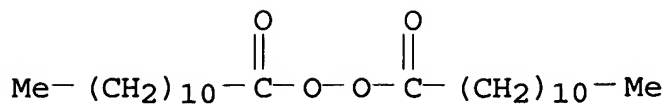
RN 105-64-6 HCA

CN Peroxydicarbonic acid, bis(1-methylethyl) ester (9CI) (CA INDEX NAME)



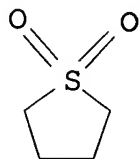
RN 105-74-8 HCA

CN Peroxide, bis(1-oxododecyl) (9CI) (CA INDEX NAME)



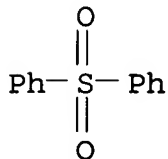
RN 126-33-0 HCA

CN Thiophene, tetrahydro-, 1,1-dioxide (CA INDEX NAME)



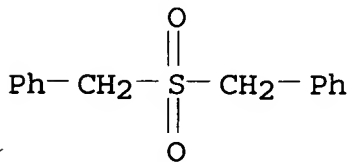
RN 127-63-9 HCA

CN Benzene, 1,1'-sulfonylbis- (9CI) (CA INDEX NAME)



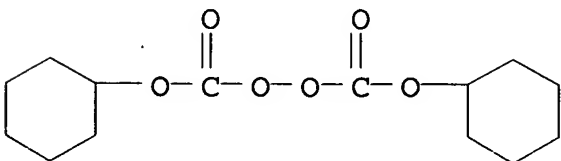
RN 620-32-6 HCA

CN Benzene, 1,1'-[sulfonylbis(methylene)]bis- (9CI) (CA INDEX NAME)



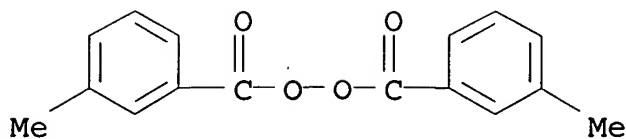
RN 1561-49-5 HCA

CN Peroxydicarbonic acid, dicyclohexyl ester (6CI, 8CI, 9CI) (CA INDEX NAME)



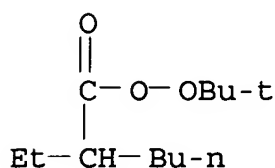
RN 1712-87-4 HCA

CN Peroxide, bis(3-methylbenzoyl) (9CI) (CA INDEX NAME)



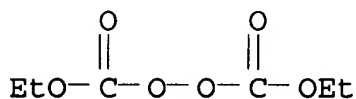
RN 3006-82-4 HCA

CN Hexaneperoxoic acid, 2-ethyl-, 1,1-dimethylethyl ester (CA INDEX NAME)



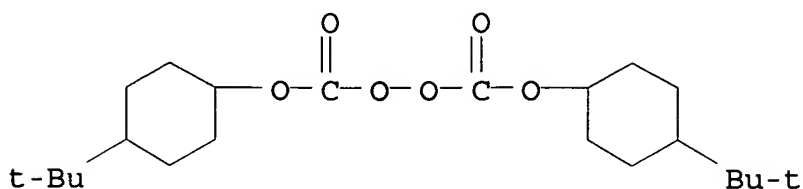
RN 14666-78-5 HCA

CN Peroxydicarbonic acid, diethyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



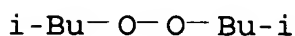
RN 15520-11-3 HCA

CN Peroxydicarbonic acid, bis[4-(1,1-dimethylethyl)cyclohexyl] ester (9CI) (CA INDEX NAME)



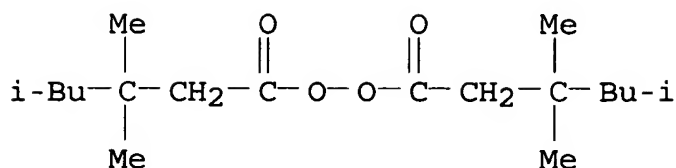
RN 32752-09-3 HCA

CN Peroxide, bis(2-methylpropyl) (CA INDEX NAME)



RN 92177-99-6 HCA

CN Peroxide, bis(3,3,5-trimethyl-1-oxohexyl) (9CI) (CA INDEX NAME)



- IC ICM H01M010-40
- INCL 429326000; 429200000; 429340000; 429331000; 429332000
- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
- ST lithium **battery** nonaq **electrolyte** soln improved safety
- IT Esters, uses
Ethers, uses
Hydrocarbons, uses
(C1-20; nonaq. **electrolytic** soln. with improved safety for lithium **battery**)
- IT Aromatic hydrocarbons, uses
(C5-20; nonaq. **electrolytic** soln. with improved safety for lithium **battery**)
- IT Secondary **batteries**
(lithium; nonaq. **electrolytic** soln. with improved safety for lithium **battery**)
- IT **Battery electrolytes**
(nonaq. **electrolytic** soln. with improved safety for lithium **battery**)
- IT Polyesters, uses
(nonaq. **electrolytic** soln. with improved safety for lithium **battery**)
- IT Alcohols, uses
(polyhydric; nonaq. **electrolytic** soln. with improved safety for lithium **battery**)
- IT 3087-37-4, Tetrapropyltitanate
(nonaq. **electrolytic** soln. with improved safety for lithium **battery**)
- IT 502-44-3, ϵ -Caprolactone 7439-93-2D, Lithium, salt
12190-79-3, Cobalt lithium oxide CoLiO_2
(nonaq. **electrolytic** soln. with improved safety for lithium **battery**)
- IT 126-58-9DP, Dipentaerythritol, deriv.
(nonaq. **electrolytic** soln. with improved safety for lithium **battery**)
- IT 56-81-5, Glycerol, uses 67-71-0, Methyl sulfone
71-43-2D, Benzene, halogenated 77-77-0, Vinyl sulfone
94-36-0, Benzoylperoxide, uses 96-49-1, Ethylene carbonate
105-64-6, Diisopropyl peroxy dicarbonate 105-74-8,
Lauroyl peroxide 108-32-7, Propylene carbonate 115-77-5,
Pentaerythritol, uses 126-33-0, Tetramethylene sulfone

126-58-9, DiPentaerythritol 127-63-9, Phenyl sulfone
 456-55-3, Trifluoromethyl phenyl ether 462-06-6, Fluorobenzene
 620-32-6, Benzyl sulfone 623-53-0, Ethyl methyl carbonate
 1561-49-5, Dicyclohexyl peroxy dicarbonate 1712-87-4
 , m-Toluoyl peroxide 2972-19-2 3006-82-4,
 tert-Butylperoxy-2-ethylhexanoate 9002-88-4, Polyethylene
 9003-07-0, Polypropylene 14666-78-5 15520-11-3,
 Bis(4-tert-butylcyclohexyl) peroxydicarbonate 21151-56-4, Benzene,
 1-chloro-4-(chloromethoxy)- 21324-40-3, Lithium
 hexafluorophosphate 28452-93-9, Butadiene sulfone
 32752-09-3, Isobutyl peroxide 49717-97-7, 2-Propenoic
 acid, 2-methyl-, ion(1-) homopolymer, uses 92177-99-6,
 3,3,5-Trimethylhexanoylperoxide 651294-25-6 651294-26-7
 651294-27-8

(nonaq. **electrolytic** soln. with improved safety for
 lithium **battery**)

L70 ANSWER 6 OF 8 HCA COPYRIGHT 2007 ACS on STN

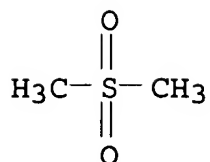
139:294681 **Electrolyte** for lithium **battery** to reduce
 overcharge and improve electrochemical characteristics. Kim,
 Jun-Ho; Lee, Ha-Young; Choy, Sang-Hoon; Kim, Ho-Sung; Noh,
 Hyeong-Gon (Samsung SDI Co., Ltd., S. Korea). U.S. Pat. Appl. Publ.
 US 2003190529 A1 20031009, 19 pp. (English). CODEN: USXXCO.
 APPLICATION: US 2003-393294 20030321. PRIORITY: KR 2002-18264
 20020403.

AB An **electrolyte** for a lithium **battery** includes a
 nonaq. org. solvent, a lithium salt, and an additive comprising (a)
 a compd. represented by the formula $[(R_1)_nC_6H(6-n+m)(X)_m]$, and (b) a
 compd. selected from the group consisting of a sulfone-based compd.,
 a poly(ester)(meth)acrylate, a polymer of poly(ester)(meth)acrylate,
 and a mixt. thereof: wherein R_1 is a C1-10 alkyl, a C 1-10 alkoxy,
 or a C6-10 aryl, and preferably a Me, Et, or methoxy, X is a
 halogen, and m and n are integers ranging from 1 to 5, where $m+n$ is
 less than or equal to 6.

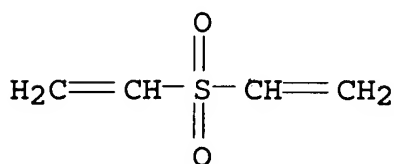
IT 67-71-0, Methyl sulfone 77-77-0, Vinyl sulfone
 94-36-0, Benzoyl peroxide, uses 105-64-6,
 Diisopropyl peroxy dicarbonate 105-74-8, Lauroyl peroxide
 126-33-0, Tetramethylene sulfone 127-63-9, Phenyl
 sulfone 620-32-6, Benzyl sulfone 1561-49-5,
 Dicyclohexyl peroxy dicarbonate 1712-87-4, m-Toluoyl
 peroxide 3006-82-4, tert-Butylperoxy-2-ethyl-hexanoate
 14666-78-5 15520-11-3, Bis(4-tert-
 butylcyclohexyl)peroxy dicarbonate 32752-09-3, Isobutyl
 peroxide 92177-99-6, 3,3,5-Trimethylhexanoyl peroxide
 (**electrolyte** for lithium **battery** to reduce
 overcharge and improve electrochem. characteristics)

RN 67-71-0 HCA

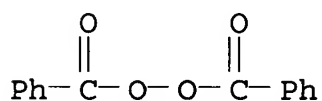
CN Methane, sulfonylbis- (9CI) (CA INDEX NAME)



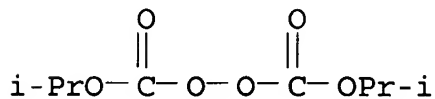
RN 77-77-0 HCA
CN Ethene, 1,1'-sulfonylbis- (9CI) (CA INDEX NAME)



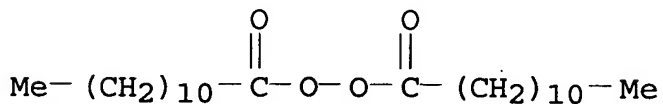
RN 94-36-0 HCA
CN Peroxide, dibenzoyl (9CI) (CA INDEX NAME)



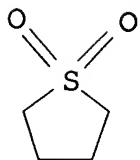
RN 105-64-6 HCA
CN Peroxydicarbonic acid, bis(1-methylethyl) ester (9CI) (CA INDEX NAME)



RN 105-74-8 HCA
CN Peroxide, bis(1-oxododecyl) (9CI) (CA INDEX NAME)

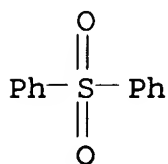


RN 126-33-0 HCA
CN Thiophene, tetrahydro-, 1,1-dioxide (CA INDEX NAME)



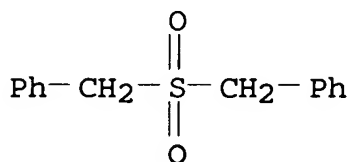
RN 127-63-9 HCA

CN Benzene, 1,1'-sulfonylbis- (9CI) (CA INDEX NAME)



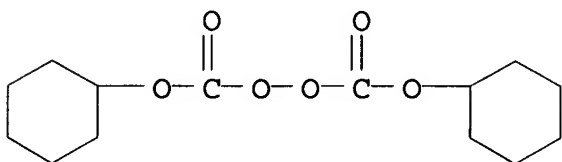
RN 620-32-6 HCA

CN Benzene, 1,1'-[sulfonylbis(methylene)]bis- (9CI) (CA INDEX NAME)



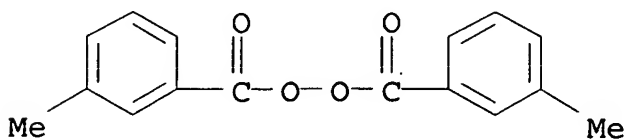
RN 1561-49-5 HCA

CN Peroxydicarbonic acid, dicyclohexyl ester (6CI, 8CI, 9CI) (CA INDEX NAME)



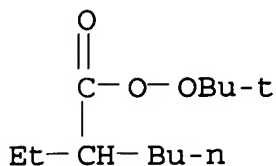
RN 1712-87-4 HCA

CN Peroxide, bis(3-methylbenzoyl) (9CI) (CA INDEX NAME)



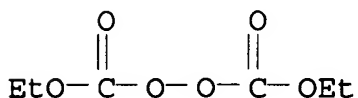
RN 3006-82-4 HCA

CN Hexaneperoxoic acid, 2-ethyl-, 1,1-dimethylethyl ester (CA INDEX NAME)



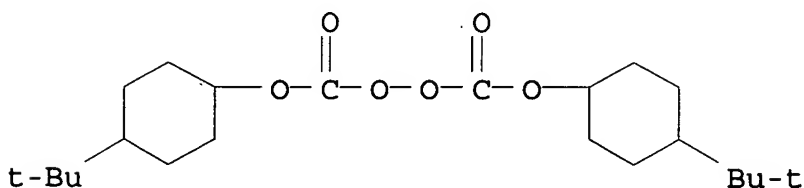
RN 14666-78-5 HCA

CN Peroxydicarbonic acid, diethyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



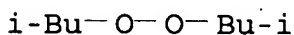
RN 15520-11-3 HCA

CN Peroxydicarbonic acid, bis[4-(1,1-dimethylethyl)cyclohexyl] ester (9CI) (CA INDEX NAME)



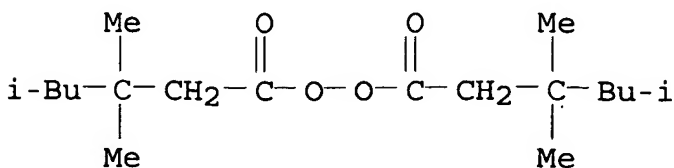
RN 32752-09-3 HCA

CN Peroxide, bis(2-methylpropyl) (CA INDEX NAME)



RN 92177-99-6 HCA

CN Peroxide, bis(3,3,5-trimethyl-1-oxohexyl) (9CI) (CA INDEX NAME)



IC ICM H01M006-18
INCL 429307000; 429309000; 429326000; 429322000; 429323000; 429330000
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST lithium **battery electrolyte** overcharge lowering
IT **Battery electrolytes**
(**electrolyte** for lithium **battery** to reduce overcharge and improve electrochem. characteristics)
IT **Secondary batteries**
(lithium; **electrolyte** for lithium **battery** to reduce overcharge and improve electrochem. characteristics)
IT Peroxides, uses
(org.; **electrolyte** for lithium **battery** to reduce overcharge and improve electrochem. characteristics)
IT Alcohols, uses
(trihydric; **electrolyte** for lithium **battery** to reduce overcharge and improve electrochem. characteristics)
IT 3087-37-4, Tetrapropyltitanate
(**electrolyte** for lithium **battery** to reduce overcharge and improve electrochem. characteristics)
IT 71-43-2, Benzene, uses 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate 108-88-3, Toluene, uses 462-06-6, Fluorobenzene 616-38-6, Dimethyl carbonate 623-53-0, Ethyl methyl carbonate 623-96-1, Dipropyl carbonate 1330-20-7, Xylene, uses 4437-85-8, Butylene carbonate 7447-41-8, Lithium chloride (LiCl), uses 7791-03-9, Lithium perchlorate 10377-51-2, Lithium iodide (LiI) 12355-58-7, Lithium aluminate (Li₅AlO₄) 14283-07-9, Lithium tetrafluoroborate 18424-17-4, Lithium hexafluoroantimonate 21324-40-3, Lithium hexafluorophosphate 27359-10-0, Trifluorotoluene 29935-35-1, Lithium hexafluoroarsenate 33454-82-9, Lithium triflate 35363-40-7, Ethyl propyl carbonate, uses 56525-42-9, Methyl propyl carbonate, uses 90076-65-6 131651-65-5, Lithium perfluorobutanesulfonate
(**electrolyte** for lithium **battery** to reduce overcharge and improve electrochem. characteristics)
IT 126-58-9DP, Dipentaerythritol, reaction product with ϵ -caprolactone 502-44-3DP, ϵ -Caprolactone, reaction product with dipentaerythritol 609772-45-4P
(**electrolyte** for lithium **battery** to reduce overcharge and improve electrochem. characteristics)
IT 56-81-5, Glycerol, uses 67-71-0, Methyl sulfone 77-77-0, Vinyl sulfone 79-10-7D, Acrylic acid, ω -fatty acid esters C2-C21 79-41-4D, Methacrylic acid, ω -fatty acid esters C2-C21 94-36-0, Benzoyl peroxide, uses 104-92-7, 4-Bromoanisole 105-64-6, Diisopropyl peroxy dicarbonate 105-74-8, Lauroyl peroxide 126-33-0, Tetramethylene sulfone 127-63-9, Phenyl sulfone 149-32-6, Erythritol 452-10-8, 2,4-Difluoroanisole

456-49-5, 3-Fluoroanisole 459-60-9, 4-Fluoroanisole
 620-32-6, Benzyl sulfone 623-12-1, 4-Chloroanisole
 1561-49-5, Dicyclohexyl peroxy dicarbonate 1712-87-4
 , m-Toluoyl peroxide 2398-37-0, 3-Bromoanisole 2845-89-8,
 3-Chloroanisole 3006-82-4, tert-Butylperoxy-2-ethyl-
 hexanoate 14666-78-5 15520-11-3,
 Bis(4-tert-butylcyclohexyl)peroxy dicarbonate 28452-93-9,
 Butadiene sulfone 32752-09-3, Isobutyl peroxide
 92177-99-6, 3,3,5-Trimethylhexanoyl peroxide 93343-10-3,
 3,5-Difluoroanisole 202925-08-4, 3-Chloro-5-fluoroanisole
 609365-67-5

(electrolyte for lithium battery to reduce
 overcharge and improve electrochem. characteristics)

L70 ANSWER 7 OF 8 HCA COPYRIGHT 2007 ACS on STN

139:182872 Polymer **electrolyte** for lithium secondary
battery. Jung, Cheol-Soo; Kim, Ki-Ho; Bong, Cul-Hwen; Yang,
 Doo-Kyung; Lee, Kyoung-Hee; Lee, Yong-Beom; Lim, Hyun-Leong;
 Yamaguchi, Takitaro; Shimizu, Ryuichi (Samsung SDI Co., Ltd., S.
 Korea). U.S. Pat. Appl. Publ. US 2003157411 A1 20030821, 14 pp.
 (English). CODEN: USXXCO. APPLICATION: US 2002-287486 20021105. *N*
 PRIORITY: KR 2002-8303 20020216.

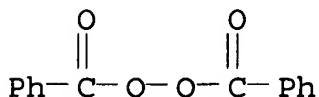
AB A solid polymer **electrolyte**, a lithium **battery**
 employing the same, and methods of forming the **electrolyte**
 and the lithium **battery** are disclosed. The polymer
electrolyte includes polyester methacrylate having a
 polyester polyol moiety having three or more hydroxide (-OH) groups,
 at least one hydroxide group being substituted by a methacrylic ester
 group and at least one hydroxide group being substituted by a
 radical non-reactive group, or its polymer, a peroxide having 6-40
 carbon atoms, and an **electrolytic** soln. including a
 lithium salt and an org. solvent.

IT 94-36-0, Benzoyl peroxide, processes 105-74-8,
 Lauroyl peroxide

(polymer **electrolyte** for lithium secondary
battery).

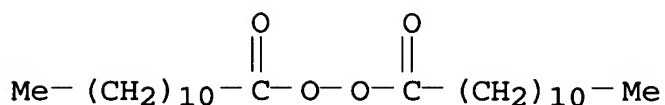
RN 94-36-0 HCA

CN Peroxide, dibenzoyl (9CI) (CA INDEX NAME)

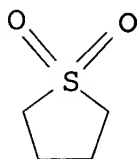


RN 105-74-8 HCA

CN Peroxide, bis(1-oxododecyl) (9CI) (CA INDEX NAME)



IT 126-33-0, Sulfolane
 (polymer electrolyte for lithium secondary
 battery)
 RN 126-33-0 HCA
 CN Thiophene, tetrahydro-, 1,1-dioxide (CA INDEX NAME)



IC ICM H01M010-40
 ICS H01M010-04
 INCL 429317000; 429307000; 429316000; 029623100
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 Section cross-reference(s): 38
 ST polymer electrolyte lithium secondary battery
 IT Aromatic hydrocarbons, uses
 (fluoro; polymer electrolyte for lithium secondary
 battery)
 IT Secondary batteries
 (lithium; polymer electrolyte for lithium secondary
 battery)
 IT Battery electrolytes
 Polymer electrolytes
 (polymer electrolyte for lithium secondary
 battery)
 IT Polyesters, uses
 (polymer electrolyte for lithium secondary
 battery)
 IT 3087-37-4, Tetrapropyltitanate
 (polymer electrolyte for lithium secondary
 battery)
 IT 94-36-0, Benzoyl peroxide, processes 105-74-8,
 Lauroyl peroxide
 (polymer electrolyte for lithium secondary
 battery)
 IT 67-68-5, Dms0, uses 68-12-2, Dmf, uses 75-05-8, Acetonitrile,
 uses 96-47-9, 2-Methyltetrahydrofuran 96-48-0,
 γ-Butyrolactone 96-49-1, Ethylene carbonate 98-95-3,

Nitrobenzene, uses 100-47-0, Benzonitrile, uses 105-58-8,
 Diethyl carbonate 108-32-7, Propylene carbonate 108-90-7,
 Chlorobenzene, uses 109-99-9, Thf, uses 110-71-4,
 1,2-Dimethoxyethane 111-46-6, Diethylene glycol, uses 115-10-6,
 Dimethyl ether 126-33-0, Sulfolane 127-19-5,
 Dimethylacetamide 542-52-9, Dibutyl carbonate 616-38-6, Dimethyl
 carbonate 623-53-0, Ethyl methyl carbonate 623-96-1, Dipropyl
 carbonate 646-06-0, Dioxolane 872-36-6, Vinylene carbonate
 1072-47-5, 1,3-Dioxolane, 4-methyl 1300-21-6, Dichloroethane
 4437-85-8, Butylene carbonate 6482-34-4, Diisopropyl carbonate
 7447-41-8, Lithium chloride (LiCl), uses 7791-03-9, Lithium
 perchlorate 9002-88-4, Polyethylene 9003-07-0, Polypropylene
 10377-51-2, Lithium iodide (LiI) 14024-11-4, Aluminum lithium
 chloride AlLiCl_4 14283-07-9, Lithium tetrafluoroborate
 18424-17-4, Lithium hexafluoroantimonate 21324-40-3, Lithium
 hexafluorophosphate 29935-35-1, Lithium hexafluoroarsenate
 30714-78-4, Ethyl butyl carbonate 33454-82-9, Lithium triflate
 51729-83-0, Methyl isopropyl carbonate 56525-42-9, Methyl propyl
 carbonate, uses 90076-65-6 131651-65-5

(polymer **electrolyte** for lithium secondary
battery)

IT 95-52-3, 2-Fluorotoluene 352-32-9, 4-Fluorotoluene 352-70-5,
 3-Fluorotoluene 462-06-6, Benzene, fluoro- 581054-59-3D, mixed
 acrylic and pentanoic acid esters

(polymer **electrolyte** for lithium secondary
battery)

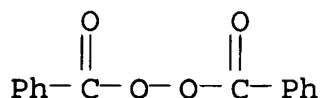
L70 ANSWER 8 OF 8 HCA COPYRIGHT 2007 ACS on STN
 126:92052 Catalyst-containing solid **electrolytes** and
batteries using these **electrolytes**.

Chaloner-Gill, Benjamin; Olsen, Ib I.; Saidi, Eileen S. (USA). U.S.
 US 5580680 A 19961203, 8 pp. (English). CODEN: USXXAM.
 APPLICATION: US 1994-267066 19940627.

AB The **electrolytes** include a 1st catalyst that is capable of
 initiating the polymn. of solvent components at elevated temps. to
 increase the resistance (or impedance) of the solid
electrolyte and thereby prevent thermal runaway and/or a 2nd
 catalyst that is capable of initiating the polymn. of flammable
 substances (e.g., olefins) in the solvent. To assure that the
 catalysts do not prematurely initiate polymn. below a certain temp.,
 the catalysts may be microencapsulated within a heat-sensitive
 material that disintegrates or dissolve at a predetd. elevated temp.
 to release the catalysts. Microencapsulation permits the controlled
 release of the catalysts into the **electrolyte** under the
 appropriate conditions.

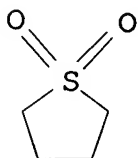
IT 94-36-0, Benzoyl peroxide, uses
 (polymn. catalyst for **battery** solid
electrolytes)

RN 94-36-0 HCA
 CN Peroxide, dibenzoyl (9CI) (CA INDEX NAME)



IT 126-33-0, Sulfolane
 (polymn. catalyst for **battery solid electrolytes** contg. solvent of)

RN 126-33-0 HCA
 CN Thiophene, tetrahydro-, 1,1-dioxide (CA INDEX NAME)



IC ICM H01M006-16
 INCL 429192000
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 Section cross-reference(s): 37
 ST **battery solid electrolyte** solvent polymn catalyst; flammable substance polymn catalyst **battery electrolyte**; safety **battery** polymn catalyst **electrolyte**
 IT Polymerization catalysts
 (Ziegler-Natta; for **battery solid electrolytes**)
 IT Polymerization catalysts
 (**battery solid electrolytes** contg.)
 IT **Battery electrolytes**
 (contg. polymn. catalyst)
 IT Secondary **batteries**
 (lithium; with polymn. catalysts for safety)
 IT Safety
 (of lithium **batteries** with polymn. catalysts-contg. **solid electrolytes**)
 IT Bronsted acids
 (polymn. catalyst for **battery solid electrolytes**)
 IT 78-67-1, Azobisisobutyronitrile 94-36-0, Benzoyl peroxide, uses 110-22-5, Acetyl peroxide 7440-23-5, Sodium, uses 7637-07-2, Boron trifluoride, uses
 (polymn. catalyst for **battery solid**)

electrolytes)

IT 67-68-5, uses 96-48-0, γ -Butyrolactone 96-49-1, Ethylene
carbonate 108-32-7, Propylene carbonate 110-71-4, Glyme
111-96-6, Diglyme 112-49-2, Triglyme 126-33-0, Sulfolane
143-24-8, Tetraglyme 646-06-0, Dioxolane
(polymn. catalyst for **battery** solid
electrolytes contg. solvent of)

=>

=> D L71 1-6 CBIB ABS HITSTR HITIND

L71 ANSWER 1 OF 6 HCA COPYRIGHT 2007 ACS on STN

146:145946 **Electrolyte** for lithium secondary **battery**

. Kim, Cheonsop (Samsung Sdi Co., Ltd., S. Korea). U.S. Pat. Appl.

Publ. US 2007009806 A1 20070111, 11pp. (English). CODEN: USXXCO.

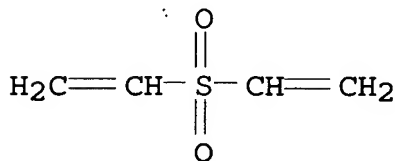
APPLICATION: US 2006-481911 20060707. PRIORITY: KR 2005-61409
20050707.

AB The invention concerns an **electrolyte** for a lithium
secondary **battery** and a lithium secondary **battery**
having the **electrolyte**, the **electrolyte**
including a lithium salt; a non-aq. org. solvent including
 γ -butyrolactone-; and a succinic anhydride.

IT 77-77-0, Divinyl sulfone
(**electrolyte** for lithium secondary **battery**)

RN 77-77-0 HCA

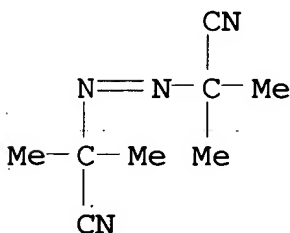
CN Ethene, 1,1'-sulfonylbis- (9CI) (CA INDEX NAME)



IT 78-67-1, 2,2'-Azo-bis(isobutyronitrile)
(**electrolyte** for lithium secondary **battery**)

RN 78-67-1 HCA

CN Propanenitrile, 2,2'-azobis[2-methyl- (9CI) (CA INDEX NAME)



INCL 429329000; 429332000; 429200000

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST **electrolyte** lithium secondary **battery**

IT **Battery electrolytes**

(**electrolyte** for lithium secondary **battery**)

IT Aromatic hydrocarbons, uses

Esters, uses

Ethers, uses

Ketones, uses

- (electrolyte for lithium secondary battery)
- IT Secondary batteries
(lithium; electrolyte for lithium secondary battery)
- IT 77-77-0, Divinyl sulfone 96-48-0, γ -Butyrolactone
108-30-5, Succinic anhydride, uses 872-36-6, Vinylene carbonate
3741-38-6, Ethylene sulfite 25721-76-0, Poly(ethylene glycol)dimethacrylate 26570-48-9, Poly(ethylene glycol)diacrylate
49717-87-5, uses 919110-87-5
(electrolyte for lithium secondary battery)
- IT 94-36-0, Dibenzoyl peroxide, reactions 105-64-6, Di-isopropyl peroxydicarbonate 105-74-8, Dilauroyl peroxide 107-71-1, tert-Butyl peroxy acetate 109-13-7, tert-Butyl peroxy isobutyrate 110-22-5, Diacetyl peroxide 614-45-9, tert-Butyl peroxy benzoate 686-31-7, tert-Amylperoxy 2-ethyl hexanoate 927-07-1, tert-Butyl peroxy pivalate 2372-21-6, tert-Butyl peroxy isopropyl carbonate 3006-82-4, tert-Butylperoxy-2-ethyl hexanoate 3851-87-4, Bis(3,5,5-trimethylhexanoyl) peroxide 13122-18-4 15518-51-1, Diethylene glycol bis(tert-butyl peroxy carbonate) 15520-11-3, Bis(4-tert-butylcyclohexyl) peroxydicarbonate 16111-62-9, Di-2-ethylhexyl peroxy dicarbonate 26748-38-9, tert-Butyl peroxy neoheptanoate 29240-17-3, tert-Amyl peroxy pivalate 34443-12-4, tert-Butyl peroxy-2-ethylhexyl carbonate 36536-42-2 51938-28-4, tert-Hexyl peroxy pivalate 52238-68-3 68860-54-8 919110-90-0
(electrolyte for lithium secondary battery)
- IT 71-43-2, Benzene, uses 78-67-1, 2,2'-Azo-bis(isobutyronitrile) 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate 108-67-8, Mesitylene, uses 108-86-1, Bromobenzene, uses 108-88-3, Toluene, uses 108-90-7, Chlorobenzene, uses 462-06-6, Fluorobenzene 463-79-6D, Carbonic acid, ester 616-38-6, Dimethyl carbonate 623-53-0, EthylMethyl carbonate 623-96-1, Dipropyl carbonate 1330-20-7, Xylene, uses 2094-98-6 4419-11-8, 2,2'-Azo-bis(2,4-dimethyl valeronitrile) 4437-70-1, 2,3-Butylene carbonate 4437-85-8, 1,2-Butylene carbonate 4437-86-9 7447-41-8, Lithium chloride, uses 7791-03-9, Lithium perchlorate 10377-51-2, Lithium iodide 14024-11-4, Lithium tetrachloroaluminate 14283-07-9, Lithium tetrafluoroborate 18424-17-4, Lithium hexafluoroantimonate 21324-40-3, Lithium hexafluorophosphate 29935-35-1, Lithium hexafluoroarsenate 33454-82-9, Lithium triflate 35363-40-7, Ethylpropyl carbonate 37220-89-6, Aluminum lithium oxide 56525-42-9, Methylpropyl carbonate 89489-56-5, 1,2-Pentylene carbonate 90076-65-6 114435-02-8, Fluoroethylene carbonate 131651-65-5
(electrolyte for lithium secondary battery)

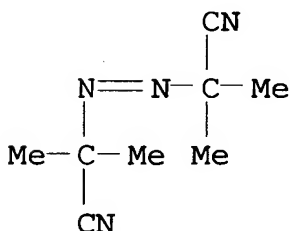
electrolysis. Ma, Qian; Ye, Shaodan; Li, Yijiu; Liu, Yafei; Ni, Yaming (School of Life Science and Technology Analysis and Research Center, Tongji University, Shanghai, 200092, Peop. Rep. China). Gongye Shuichuli, 23(5), 38-41 (Chinese) 2003. CODEN: GOSHFA. ISSN: 1005-829X. Publisher: Gongye Shuichuli Zazhishe.

AB The photoresist-contg. wastewater was treated by the Fe chip micro-electrolysis method. The inorg. and org. pollutants in the wastewater after the treatment were analyzed by ICP-AES and GC-MS. There were several kinds of mechanisms for the removal or degrdn. of contaminants, such as the electrochem. corrosion, activated C absorption, coagulation sedimentation of Fe³⁺ and Fe²⁺, the redn. of Fe, etc. The removal efficiency for heavy metals such as Cu, Zn, V, and Sn was 100, 47, 100, and 98.1%, resp. The removal efficiency for phthalic anhydride, homologs of polypropylene glycol, 2-butenic acid, and benzoic acid were 100, 29.9, 27.7, and 56.5%, resp. The degradability for nitrobenzene and 2-chlorobutenic acid was all 100%.

IT 78-67-1, Azobis(isobutyronitrile) 3112-85-4,
Methyl phenyl sulfone
(iron chip micro-electrolysis of photoresist-contg.
wastewater)

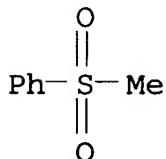
RN 78-67-1 HCA

CN Propanenitrile, 2,2'-azobis[2-methyl- (9CI) (CA INDEX NAME)



RN 3112-85-4 HCA

CN Benzene, (methylsulfonyl)- (CA INDEX NAME)



CC 60-2 (Waste Treatment and Disposal)

IT Wastewater treatment

(absorption; iron chip micro-electrolysis of
photoresist-contg. wastewater)

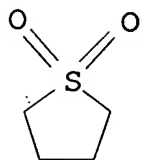
IT Wastewater treatment

- (coagulation; iron chip micro-electrolysis of photoresist-contg. wastewater)
- IT Wastewater treatment
(electrochem.; iron chip micro-electrolysis of photoresist-contg. wastewater)
- IT Heavy metals
Polyoxyalkylenes, processes
(iron chip micro-electrolysis of photoresist-contg. wastewater)
- IT Wastewater treatment
(settling; iron chip micro-electrolysis of photoresist-contg. wastewater)
- IT 7439-89-6, Iron, uses
(iron chip micro-electrolysis of photoresist-contg. wastewater)
- IT 65-85-0, Benzoic acid, processes 70-55-3, 4-Methylbenzenesulfonamide 78-67-1, Azobis(isobutyronitrile) 85-44-9, Phthalic anhydride 98-95-3, Nitrobenzene, processes 100-52-7, Benzaldehyde, processes 104-76-7, 2-Ethyl-1-hexanol 119-61-9, Benzophenone, processes 121-69-7, N,N-Dimethylaniline, processes 123-86-4, Butyl acetate 600-13-5 619-56-7, 4-Chlorobenzamide 822-06-0, Hexamethylene diisocyanate 930-68-7, 2-Cyclohexenone 3112-85-4, Methyl phenyl sulfone 3724-65-0, 2-Butenoic acid 7440-31-5, Tin, processes 7440-50-8, Copper, processes 7440-62-2, Vanadium, processes 7440-66-6, Zinc, processes 13423-22-8, 3,3,4,4-Tetramethyl-2-azetidinone 25322-69-4, Polypropylene glycol 29911-27-1
(iron chip micro-electrolysis of photoresist-contg. wastewater)
- L71 ANSWER 3 OF 6 HCA COPYRIGHT 2007 ACS on STN
- 140:256340 Anodes for lithium **battery**. Kim, Yong-tae; Choi, Su-suk; Choi, Yun-suk; Lee, Kyoung-hee (Samsung Sdi Co., Ltd., S. Korea). U.S. Pat. Appl. Publ. US 2004058232 A1 20040325, 10 pp. (English). CODEN: USXXCO. APPLICATION: US 2003-664157 20030917. PRIORITY: KR 2002-57577 20020923.
- AB A lithium neg. electrode for a lithium **battery** has good cycle life and capacity characteristics. The lithium neg. electrode comprises a lithium metal layer and a protective layer present on the lithium metal layer, where the protective layer includes an organosulfur compd. An organosulfur compd. having a thiol terminal group is preferred since such a compd. can form a complex with lithium metal to enable coating to be carried out easily. The organosulfur compd. has a large no. of S or N elements having high electronegativity to form a complex with lithium ions, so it renders lithium ions to be deposited relatively evenly on the lithium metal surface, reducing dendrite formation.
- IT 126-33-0, Sulfolane

(anodes for lithium **battery**)

RN 126-33-0 HCA

CN Thiophene, tetrahydro-, 1,1-dioxide (CA INDEX NAME)

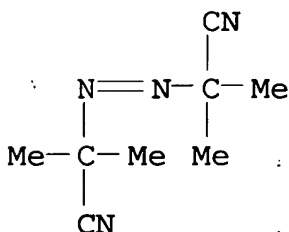


IT 78-67-1, Azobisisobutyronitrile

(anodes for lithium **battery**)

RN 78-67-1 HCA

CN Propanenitrile, 2,2'-azobis[2-methyl- (9CI) (CA INDEX NAME)



IC ICM H01M002-16

ICS H01M004-66; H01M004-40

INCL 429137000; 429246000; 429245000; 429212000; 429231950

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38ST anode lithium **battery**

IT Chalcogenides

Oxides (inorganic), uses

(Li-contg.; anodes for lithium **battery**)

IT Peroxides, uses

(acyl; anodes for lithium **battery**)

IT Hydroperoxides

(alkyl, tertiary; anodes for lithium **battery**)

IT Peroxides, uses

(alkyl; anodes for lithium **battery**)IT **Battery** anodes

Coating materials

Conducting polymers

(anodes for lithium **battery**)

IT Acrylic polymers, uses

Polyanilines

Polyoxyalkylenes, uses

(anodes for lithium **battery**)

- IT Amino acids, uses
Halogens
Lewis acids
Rare earth chlorides
Sulfonic acids, uses
Transition metal compounds
(dopant; anodes for lithium battery)
- IT Primary batteries
Secondary batteries
(lithium; anodes for lithium battery)
- IT Esters, uses
Ketals
(peroxy; anodes for lithium battery)
- IT Crown ethers
Polybenzimidazoles
Polyquinolines
Polyquinoxalines
(thiophenes, polymers; anodes for lithium battery)
- IT 110-71-4 111-96-6, Diglyme 126-33-0, Sulfolane
646-06-0, 1,3-Dioxolane 7439-93-2, Lithium, uses 7704-34-9,
Sulfur, uses
(anodes for lithium battery)
- IT 67-63-0, Isopropyl alcohol, uses 75-91-2, tert-Butyl hydroperoxide
78-63-7, 2,5-Dimethyl-2,5-di-(tert-butylperoxy)hexane
78-67-1, Azobisisobutyronitrile 80-15-9, Cumene
hydroperoxide 80-43-3, Dicumyl peroxide 94-36-0, Dibenzoyl
peroxide, uses 105-74-8, Dilauroyl peroxide 110-05-4,
Di-tert-butyl peroxide 123-23-9, Succinic acid peroxide
762-12-9, Didecanoyl peroxide 927-07-1, tert-Butylperoxypivalate
2167-23-9, 2,2-Di-(tert-butylperoxy)butane 3025-88-5,
2.5-Dihydroperoxy-2,5-dimethylhexane 4511-39-1,
tert-Amylperoxybenzoate 15667-10-4, 1,1-Di-(tert-
amylperoxy)cyclohexane 16066-38-9, Di(n-propyl)peroxy dicarbonate
16111-62-9, Di(2-ethylhexyl)peroxy dicarbonate 19910-65-7,
Di(sec-butyl)peroxy dicarbonate 24937-05-1, Poly(ethyleneadipate)
24938-43-0, Poly(β -propiolactone) 24969-06-0,
Polyepichlorohydrin 25190-62-9, Poly(p-phenylene) 25233-30-1,
Polyaniline 25233-30-1D, Polyaniline, sulfonated 25233-34-5,
Polythiophene 25233-34-5D, Polythiophene, derivs. 25322-68-3,
Peo 25322-69-4, Polypropylene oxide 25667-11-2,
Poly(ethylenesuccinate) 25721-76-0, Polyethylene glycol
dimethacrylate 25852-49-7, Polypropylene glycol dimethacrylate
26570-48-9, Poly(ethylene glycol diacrylate) 26748-47-0,
 α -Cumylperoxyneodecanoate 34099-48-4, Peroxydicarbonate
52496-08-9, Poly(propyleneglycoldiacrylate) 55794-20-2, Ethyl
3,3-di-(tert-butylperoxy)butyrate 95732-35-7 97332-10-0,
Poly(N-propylaziridine) 139096-57-4, Isoquinoline homopolymer
172973-34-1

(anodes for lithium battery)

IT 865-44-1, Iodine trichloride 1493-13-6, Triflic acid 7446-11-9, Sulfur trioxide, uses 7550-45-0, Titanium chloride (TiCl₄) (T-4)-, uses 7553-56-2, Iodine, uses 7601-90-3, Perchloric acid, uses 7637-07-2, uses 7647-01-0, Hydrochloric acid, uses 7647-19-0, Phosphorus pentafluoride 7664-39-3, Hydrofluoric acid, uses 7664-93-9, Sulfuric acid, uses 7697-37-2, Nitric acid, uses 7705-08-0, Ferric chloride, uses 7721-01-9, Tantalum chloride (TaCl₅) 7726-95-6, Bromine, uses 7782-44-7, Oxygen, uses 7782-50-5, Chlorine, uses 7783-68-8, Niobium fluoride nbf₅ 7783-70-2, Antimony pentafluoride 7783-81-5 7783-82-6 7783-93-9, Silver perchlorate 7784-36-3, Arsenic pentafluoride 7789-21-1, Fluorosulfonic acid 7789-33-5, Iodine monobromide 7790-94-5, Chlorosulfonic acid 7790-99-0, Iodine monochloride 10026-11-6 10026-12-7, Niobium chloride (NbCl₅) 10277-43-7, Lanthanum nitrate hexahydrate 10294-33-4, Boron tribromide 10294-34-5 13283-01-7 13499-05-3 13709-32-5, Bis(fluorosulfonyl)peroxide 13774-85-1 13819-84-6, Molybdenum fluoride mof₅ 13870-10-5, Iron chloride oxide feocl 13873-84-2, Iodine monofluoride 14635-75-7, Nitrosyl tetrafluoroborate 14797-73-0, Perchlorate 14874-70-5, Tetrafluoroborate 16871-80-0, Nitrosyl hexachloroantimonate 16887-00-6, Chloride, uses 16919-18-9, Hexafluorophosphate 16941-92-7, Hexachloroiridic acid 16973-45-8, Hexafluoroarsenate 17111-95-4 17856-92-7 20461-54-5, Iodide, uses 24959-67-9, Bromide, uses 25321-43-1, Octylbenzenesulfonic acid 27176-87-0, Dodecylbenzene sulfonic acid

(dopant; anodes for lithium battery)

IT 540-63-6, 1,2-Ethanedithiol 1072-71-5, 2,5-Dimercapto-1,3,4-thiadiazole 2001-93-6, 2,4-Dimercaptopyrimidine 2150-02-9, Bis(2-mercaptoethyl)ether 3570-55-6, Bis(2-mercaptoethyl)sulfide 9002-98-6 9002-98-6D, derivs. 37306-44-8D, Triazole, mecapto derivs 131538-50-6 135886-78-1 135886-79-2

(protective coating; anodes for lithium battery)

IT 7704-34-9D, Sulfur, organosulfur compd.

(protective layer; anodes for lithium battery)

IT 273-77-8, 1,2,3-Benzothiadiazole 612-79-3, 6,6'-Biquinoline 25013-01-8, Polypyridine 25013-01-8D, Polypyridine, derivs. 26856-35-9, Dihydrophenanthrene 27986-50-1, Poly(1,3-cyclohexadiene) 30604-81-0, Polypyrrole 30604-81-0D, Polypyrrole, derivs. 51937-67-8, Polyferrocene 71730-08-0, Polyanthraquinone 136902-52-8, 2,2'-Bipyridine homopolymer 136902-52-8D, 2,2'-Bipyridine homopolymer, derivs. 190201-51-5, Pyrimidine homopolymer 190201-57-1, 1,5-Naphthyridine homopolymer (thiophenes, polymers; anodes for lithium battery)

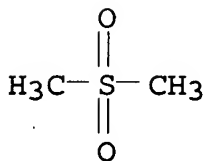
Yong-Chul; Jung, Won-Ii; Kim, Geun-Bae; Cho, Jae-Phil; Jung, Cheol-Soo (S. Korea). U.S. Pat. Appl. Publ. US 2004048163 A1 20040311, 13 pp. (English). CODEN: USXXCO. APPLICATION: US 2003-656086 20030905. PRIORITY: KR 2002-53879 20020906.

AB An **electrolyte** for a lithium **battery** includes a nonaq. org. solvent, a lithium salt, and an additive comprising (a) a sulfone-based compd. and (b) a C3-30 org. peroxide or azo-based compd. The **electrolyte** may further include a poly(ester)(meth)acrylate or a polymer that is derived from a (polyester)polyol with at least three hydroxyl (-OH) groups, where a portion or all of the hydroxyl groups are substituted with a (meth)acrylic ester and the remaining hydroxyl groups that are not substituted with the (meth)acrylic ester are substituted with a group having no radical reactivity. The lithium **battery** comprising the **electrolyte** of the present invention has a significantly improved charge-discharge and cycle life characteristics, recovery capacity ratio at high temp., and swelling inhibition properties.

IT 67-71-0, Methyl sulfone 77-77-0, Vinyl sulfone
78-67-1, 2,2'-Azobisisobutyronitrile 126-33-0,
Tetramethylene sulfone 127-63-9, Phenyl sulfone
620-32-6, Benzyl sulfone
(**electrolyte** for lithium **battery**)

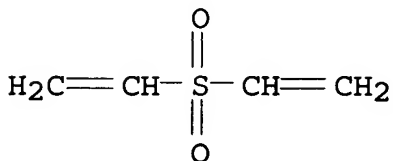
RN 67-71-0: HCA

CN Methane, sulfonylbis- (9CI) (CA INDEX NAME)



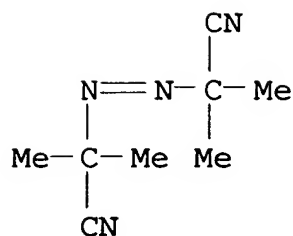
RN 77-77-0 HCA

CN Ethene, 1,1'-sulfonylbis- (9CI) (CA INDEX NAME)



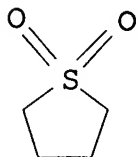
RN 78-67-1 HCA

CN Propanenitrile, 2,2'-azobis[2-methyl- (9CI) (CA INDEX NAME)



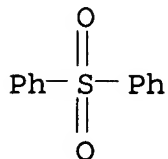
RN 126-33-0 HCA

CN Thiophene, tetrahydro-, 1,1-dioxide (CA INDEX NAME)



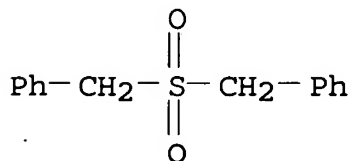
RN 127-63-9 HCA

CN Benzene, 1,1'-sulfonylbis- (9CI) (CA INDEX NAME)



RN 620-32-6 HCA

CN Benzene, 1,1'-[sulfonylbis(methylene)]bis- (9CI) (CA INDEX NAME)



IC ICM H01M010-40

INCL 429326000; 429329000; 429339000; 429340000

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38

ST lithium battery electrolyte

IT Battery electrolytes

(electrolyte for lithium battery)

IT Aromatic hydrocarbons, uses

Carbonates, uses
Esters, uses
Ethers, uses
Ketones, uses
 (**electrolyte for lithium battery**)
IT Azo compounds
 (**electrolyte for lithium battery**)
IT Carbonaceous materials (technological products)
 (**electrolyte for lithium battery**)
IT Sulfones
 (**electrolyte for lithium battery**)
IT Polyesters, uses
 (hydroxy-terminated; **electrolyte for lithium battery**)
IT Secondary batteries
 (lithium; **electrolyte for lithium battery**)
IT Polyesters, uses
 (methacrylate; **electrolyte for lithium battery**)
IT Peroxides, uses
 (org., C3-30; **electrolyte for lithium battery**)
IT Esters, uses
 (poly-; **electrolyte for lithium battery**)
IT Imides
Sulfonic acids, uses
 (sulfonimides, perfluoro derivs., lithium salts;
 electrolyte for lithium battery)
IT 56-81-5, Glycerol, uses 71-43-2, Benzene, uses 96-49-1, Ethylene
carbonate 98-95-3, Nitrobenzene, uses 105-58-8, Diethyl
carbonate 108-32-7, Propylene carbonate 108-88-3, Toluene, uses
108-90-7, Chlorobenzene, uses 149-32-6, Erythritol 462-06-6,
Fluorobenzene 616-38-6, Dimethyl carbonate 623-53-0, Methylene
carbonate 623-96-1, Dipropyl carbonate 1330-20-7, Xylene, uses
4437-85-8, Butylene carbonate 7790-99-0, Iodine chloride (ICl)
7791-03-9, Lithium perchlorate 10377-51-2, Lithium iodide (LiI)
14024-11-4, Lithium tetrachloroaluminate 14283-07-9, Lithium
tetrafluoroborate 18424-17-4, Lithium hexafluoroantimonate
21324-40-3, Lithium hexafluorophosphate 27359-10-0,
Trifluorotoluene 29935-35-1, Lithium hexafluoroarsenate
33454-82-9, Lithium triflate 35363-40-7, Ethyl propyl carbonate,
uses 39300-70-4, Lithium nickel oxide 56525-42-9, Methyl propyl
carbonate, uses 90076-65-6 131651-65-5, Lithium
nonafluorobutanesulfonate 162684-16-4, Lithium manganese nickel
oxide 193215-00-8, Cobalt lithiummanganese nickel oxide
Co_{0.1}LiMn_{0.2}Ni_{0.7}O₂
 (**electrolyte for lithium battery**)
IT 67-71-0, Methyl sulfone 77-77-0, Vinyl sulfone

78-67-1, 2,2'-Azobisisobutyronitrile 94-36-0, Benzoyl peroxide, uses 105-64-6, Diisopropyl peroxy dicarbonate 105-74-8, Lauroyl peroxide 126-33-0, Tetramethylene sulfone 127-63-9, Phenyl sulfone 620-32-6, Benzyl sulfone 1561-49-5, Dicyclohexylperoxy dicarbonate 1712-87-4, m-Toluoyl peroxide 3006-82-4, tert-Butylperoxy-2-ethyl hexanoate 14666-78-5 15520-11-3, Bis(4-tert-butylcyclohexyl)peroxy dicarbonate 26748-41-4 28452-93-9, Butadiene sulfone 32752-09-3, Isobutyl peroxide 92177-99-6, 3,3,5-Trimethylhexanoyl peroxide

(electrolyte for lithium battery)

IT 79-10-7DP, Acrylic acid, reaction product with dipentaerythritol and ϵ -caprolactone and butylcarbonic acid 126-58-9DP, Dipentaerythritol, reaction product with ϵ -caprolactone and acrylic acid and butylcarbonic acid 502-44-3DP, ϵ -Caprolactone, reaction product with dipentaerythritol and acrylic acid and butylcarbonic acid 10411-26-4DP, MonoButylcarbonate, reaction product with dipentaerythritol and ϵ -caprolactone and acrylic acid

(electrolyte for lithium battery)

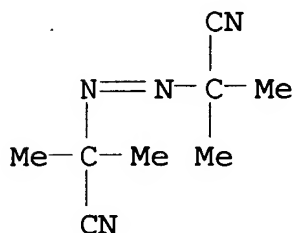
L71 ANSWER 5 OF 6 HCA COPYRIGHT 2007 ACS on STN

126:114265 Toxicity assessment of the samples from water environment using cultured mammalian cells. Kunimoto, Manabu; Yasuhara, Akio; Soma, Yuko; Nakasugi, Osami (Environmental Health Sciences Division, National Institute Environmental Studies, Tsukuba, 305, Japan). Mizu Kankyo Gakkaishi, 19(11), 855-860 (English) 1996. CODEN: MKGAEY. ISSN: 0916-8958. Publisher: Nippon Mizu Kankyo Gakkai.

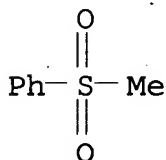
AB To evaluate the toxicity other than mutagenicity or carcinogenicity present in the water environment, in vitro cytotoxicity tests using cultured mammalian cells were utilized. Cytotoxicity was estd. based on the changes in viable cell nos. of **primary** rat cerebellar cells, rat pheochromocytoma cell PC 12h, and normal rat kidney epithelial cell NRK-52E. Evaluation of these in vitro systems was performed by testing ref. chems. proposed by MEIC (Multicenter Evaluation of In Vitro Cytotoxicity), an international program for the validation of in vitro cytotoxicity tests. When cells in culture were exposed to landfill leachate for 48 h, viable cell nos. decreased dose dependently. However, fractions prep'd. by condensation and extn. from the leachates showed much less effects on the viable cell nos. Their individual cytotoxicity did not account for that of unfractionated leachate, suggesting that component(s) with higher cytotoxicity may not be successfully recovered during the condensation and extn. process. Among the silica-gel column fractions of acetone-exts. of sediment samples, fractions eluted with acetone showed the highest cytotoxicity. These results indicate that the cytotoxicity of water samples like landfill

leachates or of their exts. can be detected with the present assay system but toxic components may not be recovered quant. during the condensation and extn. process.

- IT 78-67-1, α, α' -Azobis(isobutyronitrile)
 3112-85-4, Methyl phenyl sulfone
 (toxicity assessment of the samples from water environment using cultured mammalian cells)
- RN 78-67-1 HCA
- CN Propanenitrile, 2,2'-azobis[2-methyl- (9CI) (CA INDEX NAME)



- RN 3112-85-4 HCA
- CN Benzene, (methylsulfonyl)- (CA INDEX NAME)



- CC 4-1 (Toxicology)
 Section cross-reference(s): 61
- IT 50-06-6, Phenobarbital, biological studies 50-48-6, Amitriptyline
 50-54-4, Quinidine sulfate 50-63-5, Chloroquine phosphate
 50-78-2, Acetyl salicylic acid 54-11-5, Nicotine 54-85-3,
 Isoniazid 55-48-1, Atropine sulfate 56-23-5, biological studies
 56-75-7, Chloramphenicol 57-41-0, Phenytoin 58-08-2, Caffeine,
 biological studies 58-55-9, Theophylline, biological studies
 58-89-9, Lindane 60-13-9, Amphetamine sulfate 62-76-0, Sodium
 oxalate 64-17-5, Ethanol, biological studies 67-56-1, Methanol,
 biological studies 67-63-0, Isopropyl alcohol, biological studies
 67-66-3, Chloroform, biological studies 70-30-4, Hexachlorophene
 71-55-6, 1,1,1-Trichloroethane 75-09-2, Dichloromethane,
 biological studies 78-67-1, α, α' -
 Azobis(isobutyronitrile) 81-81-2, Warfarin 84-74-2, Dibutyl
 phthalate 87-86-5, Pentachlorophenol 94-75-7; biological studies
 103-90-2 106-46-7, 1,4-Dichlorobenzene 107-21-1, 1,2-Ethanediol,
 biological studies 108-95-2, Phenol, biological studies
 110-67-8, 3-Methoxypropanenitrile 110-88-3, Trioxane, biological

studies 111-76-2, 2-Butoxyethanol 112-49-2, Triethylene glycol dimethyl ether 115-96-8, Tris(2-chloroethyl)phosphate 121-75-5 123-91-1, 1,4-Dioxane, biological studies 127-19-5 130-61-0, Thioridazine hydrochloride 151-50-8, Potassium cyanide 152-11-4, Verapamil hydrochloride 318-98-9, Propranolol hydrochloride 341-69-5, Orphenadrine hydrochloride 439-14-5, Diazepam 469-62-5, Dextropropoxyphene 615-58-7, 2,4-Dibromophenol 632-22-4, Tetramethylurea 1327-53-3, Arsenic trioxide 1330-20-7, Xylene, biological studies 3112-85-4, Methyl phenyl sulfone 4320-85-8 4685-14-7, Paraquat 6970-56-5 7326-46-7, Tetrahydro-2-methyl-2-furanol 7446-18-6, Thallium sulfate 7447-40-7, Potassium chloride, biological studies 7487-94-7, Mercuric chloride, biological studies 7647-14-5, Sodium chloride (NaCl), biological studies 7681-49-4, Sodium fluoride, biological studies 7720-78-7, Ferrous sulfate 7758-98-7, Cupric sulfate, biological studies 10022-31-8, Barium nitrate 10377-48-7, Lithium sulfate 13423-22-8 20830-75-5, Digoxin 37306-44-8, Triazole 53778-61-3 54063-15-9 74498-88-7, 1-Methoxy-2-(methoxymethoxy)ethane (toxicity assessment of the samples from water environment using cultured mammalian cells)

L71 ANSWER 6 OF 6 HCA COPYRIGHT 2007 ACS on STN

126:92052 Catalyst-containing solid **electrolytes** and **batteries** using these **electrolytes**.

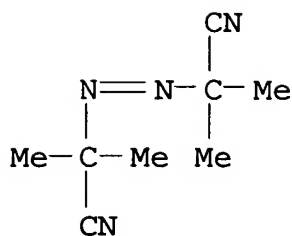
Chaloner-Gill, Benjamin; Olsen, Ib I.; Saidi, Eileen S. (USA). U.S. US 5580680 A 19961203, 8 pp. (English). CODEN: USXXAM. APPLICATION: US 1994-267066 19940627.

AB The **electrolytes** include a 1st catalyst that is capable of initiating the polymn. of solvent components at elevated temps. to increase the resistance (or impedance) of the solid **electrolyte** and thereby prevent thermal runaway and/or a 2nd catalyst that is capable of initiating the polymn. of flammable substances (e.g., olefins) in the solvent. To assure that the catalysts do not prematurely initiate polymn. below a certain temp., the catalysts may be microencapsulated within a heat-sensitive material that disintegrates or dissolve at a predetd. elevated temp. to release the catalysts. Microencapsulation permits the controlled release of the catalysts into the **electrolyte** under the appropriate conditions.

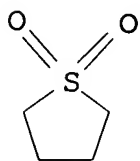
IT 78-67-1, Azobisisobutyronitrile (polymn. catalyst for **battery** solid **electrolytes**)

RN 78-67-1 HCA

CN Propanenitrile, 2,2'-azobis[2-methyl- (9CI) (CA INDEX NAME)



IT 126-33-0, Sulfolane
 (polymn. catalyst for **battery solid electrolytes** contg. solvent of)
 RN 126-33-0 HCA
 CN Thiophene, tetrahydro-, 1,1-dioxide (CA INDEX NAME)



IC ICM H01M006-16
 INCL 429192000
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 Section cross-reference(s): 37
 ST **battery solid electrolyte** solvent polymn
 catalyst; flammable substance polymn catalyst **battery electrolyte**; safety **battery** polymn catalyst
electrolyte
 IT Polymerization catalysts
 (Ziegler-Natta; for **battery solid electrolytes**
)
 IT Polymerization catalysts
 (**battery solid electrolytes** contg.)
 IT **Battery electrolytes**
 (contg. polymn. catalyst)
 IT Secondary **batteries**
 (lithium; with polymn. catalysts for safety)
 IT Safety
 (of lithium **batteries** with polymn. catalysts-contg.
 solid **electrolytes**)
 IT Bronsted acids
 (polymn. catalyst for **battery solid electrolytes**)
 IT 78-67-1, Azobisisobutyronitrile 94-36-0, Benzoyl peroxide,
 uses 110-22-5, Acetyl peroxide 7440-23-5, Sodium, uses

7637-07-2, Boron trifluoride, uses
(polymn. catalyst for **battery solid
electrolytes**)

IT 67-68-5, uses 96-48-0, γ -Butyrolactone 96-49-1, Ethylene
carbonate 108-32-7, Propylene carbonate 110-71-4, Glyme
111-96-6, Diglyme 112-49-2, Triglyme 126-33-0, Sulfolane
143-24-8, Tetraglyme 646-06-0, Dioxolane
(polymn. catalyst for **battery solid
electrolytes** contg. solvent of)

=>

=> D L72 1-6 CBIB ABS HITSTR HITIND

L72 ANSWER 1 OF 6 HCA COPYRIGHT 2007 ACS on STN

146:145946 **Electrolyte** for lithium secondary **battery**

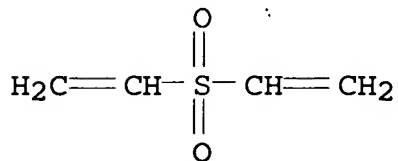
. Kim, Cheonsoo (Samsung Sdi Co., Ltd., S. Korea). U.S. Pat. Appl.
Publ. US 2007009806 A1 20070111, 11pp. (English). CODEN: USXXCO.
APPLICATION: US 2006-481911 20060707. PRIORITY: KR 2005-61409
20050707.

AB The invention concerns an **electrolyte** for a lithium
secondary **battery** and a lithium secondary **battery**
having the **electrolyte**, the **electrolyte**
including a lithium salt; a non-aq. org. solvent including
 γ -butyrolactone-; and a succinic anhydride.

IT 77-77-0, Divinyl sulfone
(**electrolyte** for lithium secondary **battery**)

RN 77-77-0 HCA

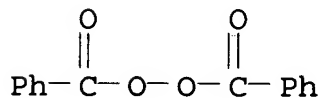
CN Ethene, 1,1'-sulfonylbis- (9CI) (CA INDEX NAME)



IT 94-36-0, Dibenzoyl peroxide, reactions 105-64-6,
Di-isopropyl peroxydicarbonate 105-74-8, Dilauroyl
peroxide 3006-82-4, tert-Butylperoxy-2-ethyl hexanoate
15520-11-3, Bis(4-tert-butylcyclohexyl) peroxydicarbonate
(**electrolyte** for lithium secondary **battery**)

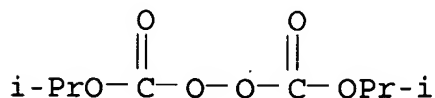
RN 94-36-0 HCA

CN Peroxide, dibenzoyl (9CI) (CA INDEX NAME)



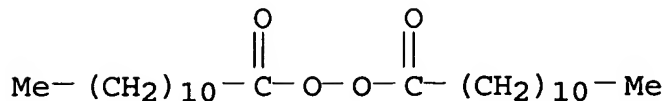
RN 105-64-6 HCA

CN Peroxydicarbonic acid, bis(1-methylethyl) ester (9CI) (CA INDEX
NAME)



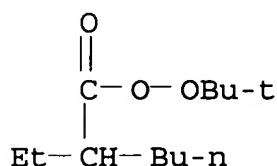
RN 105-74-8 HCA

CN Peroxide, bis(1-oxododecyl) (9CI) (CA INDEX NAME)



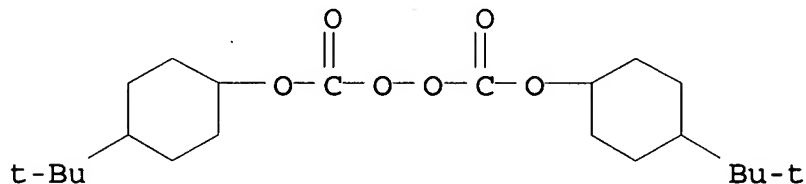
RN 3006-82-4 HCA

CN Hexaneperoxoic acid, 2-ethyl-, 1,1-dimethylethyl ester (CA INDEX NAME)



RN 15520-11-3 HCA

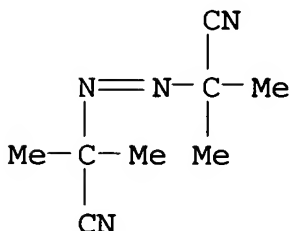
CN Peroxydicarbonic acid, bis[4-(1,1-dimethylethyl)cyclohexyl] ester (9CI) (CA INDEX NAME)



IT 78-67-1, 2,2'-Azo-bis(isobutyronitrile)
(electrolyte for lithium secondary battery)

RN 78-67-1 HCA

CN Propanenitrile, 2,2'-azobis[2-methyl- (9CI) (CA INDEX NAME)



INCL 429329000; 429332000; 429200000

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST electrolyte lithium secondary battery

IT Battery electrolytes

- (electrolyte for lithium secondary battery)
- IT Aromatic hydrocarbons, uses
Esters, uses
Ethers, uses
Ketones, uses
- (electrolyte for lithium secondary battery)
- IT Secondary batteries
(lithium; electrolyte for lithium secondary battery)
- IT 77-77-0, Divinyl sulfone 96-48-0, γ -Butyrolactone
108-30-5, Succinic anhydride, uses 872-36-6, Vinylene carbonate
3741-38-6, Ethylene sulfite 25721-76-0, Poly(ethylene glycol)
dimethacrylate 26570-48-9, Poly(ethylene glycol)
diacrylate 49717-87-5, uses 919110-87-5
- (electrolyte for lithium secondary battery)
- IT 94-36-0, Dibenzoyl peroxide, reactions 105-64-6,
Di-isopropyl peroxydicarbonate 105-74-8, Dilauroyl
peroxide 107-71-1, tert-Butyl peroxy acetate 109-13-7,
tert-Butyl peroxy isobutyrate 110-22-5, Diacetyl peroxide
614-45-9, tert-Butyl peroxy benzoate 686-31-7, tert-Amylperoxy
2-ethyl hexanoate 927-07-1, tert-Butyl peroxy pivalate 2372-21-6,
tert-Butyl peroxy isopropyl carbonate 3006-82-4,
tert-Butylperoxy-2-ethyl hexanoate 3851-87-4, Bis(3,5,5-
trimethylhexanoyl) peroxide 13122-18-4 15518-51-1, Diethylene
glycol bis(tert-butyl peroxy carbonate) 15520-11-3,
Bis(4-tert-butylcyclohexyl) peroxydicarbonate 16111-62-9,
Di-2-ethylhexyl peroxy dicarbonate 26748-38-9, tert-Butyl peroxy
neoheptanoate 29240-17-3, tert-Amyl peroxy pivalate 34443-12-4,
tert-Butyl peroxy-2-ethylhexyl carbonate 36536-42-2 51938-28-4,
tert-Hexyl peroxy pivalate 52238-68-3 68860-54-8 919110-90-0
- (electrolyte for lithium secondary battery)
- IT 71-43-2, Benzene, uses 78-67-1, 2,2'-Azo-
bis(isobutyronitrile) 96-49-1, Ethylene carbonate 105-58-8,
Diethyl carbonate 108-32-7, Propylene carbonate 108-67-8,
Mesitylene, uses 108-86-1, Bromobenzene, uses 108-88-3, Toluene,
uses 108-90-7, Chlorobenzene, uses 462-06-6, Fluorobenzene
463-79-6D, Carbonic acid, ester 616-38-6, Dimethyl carbonate
623-53-0, EthylMethyl carbonate 623-96-1, Dipropyl carbonate
1330-20-7, Xylene, uses 2094-98-6 4419-11-8,
2,2'-Azo-bis(2,4-dimethyl valeronitrile) 4437-70-1, 2,3-Butylene
carbonate 4437-85-8, 1,2-Butylene carbonate 4437-86-9
7447-41-8, Lithium chloride, uses 7791-03-9, Lithium perchlorate
10377-51-2, Lithium iodide 14024-11-4, Lithium
tetrachloroaluminate 14283-07-9, Lithium tetrafluoroborate
18424-17-4, Lithium hexafluoroantimonate 21324-40-3, Lithium
hexafluorophosphate 29935-35-1, Lithium hexafluoroarsenate
33454-82-9, Lithium triflate 35363-40-7, Ethylpropyl carbonate
37220-89-6, Aluminum lithium oxide 56525-42-9, Methylpropyl

carbonate 89489-56-5, 1,2-Pentylene carbonate 90076-65-6
 114435-02-8, Fluoroethylene carbonate 131651-65-5
 (electrolyte for lithium secondary battery)

L72 ANSWER 2 OF 6 HCA COPYRIGHT 2007 ACS on STN

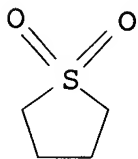
140:256340 Anodes for lithium **battery**. Kim, Yong-tae; Choi, Su-suk; Choi, Yun-suk; Lee, Kyoung-hee (Samsung Sdi Co., Ltd., S. Korea). U.S. Pat. Appl. Publ. US 2004058232 A1 20040325, 10 pp. (English). CODEN: USXXCO. APPLICATION: US 2003-664157 20030917. PRIORITY: KR 2002-57577 20020923.

AB A lithium neg. electrode for a lithium **battery** has good cycle life and capacity characteristics. The lithium neg. electrode comprises a lithium metal layer and a protective layer present on the lithium metal layer, where the protective layer includes an organosulfur compd. An organosulfur compd. having a thiol terminal group is preferred since such a compd. can form a complex with lithium metal to enable coating to be carried out easily. The organosulfur compd. has a large no. of S or N elements having high electronegativity to form a complex with lithium ions, so it renders lithium ions to be deposited relatively evenly on the lithium metal surface, reducing dendrite formation.

IT 126-33-0, Sulfolane
 (anodes for lithium **battery**)

RN 126-33-0 HCA

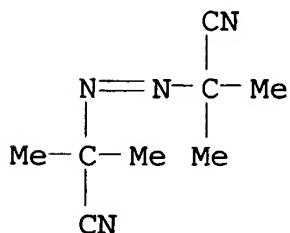
CN Thiophene, tetrahydro-, 1,1-dioxide (CA INDEX NAME)



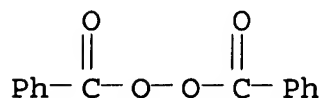
IT 78-67-1, Azobisisobutyronitrile 94-36-0, Dibenzoyl peroxide, uses 105-74-8, Dilauroyl peroxide
 (anodes for lithium **battery**)

RN 78-67-1 HCA

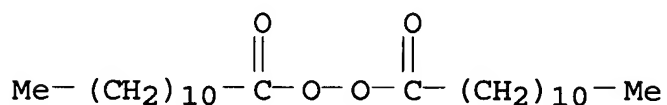
CN Propanenitrile, 2,2'-azobis[2-methyl- (9CI) (CA INDEX NAME)



RN 94-36-0 HCA
 CN Peroxide, dibenzoyl (9CI) (CA INDEX NAME)



RN 105-74-8 HCA
 CN Peroxide, bis(1-oxododecyl) (9CI) (CA INDEX NAME)



IC ICM H01M002-16
 ICS H01M004-66; H01M004-40
 INCL 429137000; 429246000; 429245000; 429212000; 429231950
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 Section cross-reference(s): 38
 ST anode lithium **battery**
 IT Chalcogenides
 Oxides (inorganic), uses
 (Li-contg.; anodes for lithium **battery**)
 IT Peroxides, uses
 (acyl; anodes for lithium **battery**)
 IT Hydroperoxides
 (alkyl, tertiary; anodes for lithium **battery**)
 IT Peroxides, uses
 (alkyl; anodes for lithium **battery**)
 IT **Battery** anodes
 Coating materials
 Conducting polymers
 (anodes for lithium **battery**)
 IT **Acrylic** polymers, uses
 Polyanilines
 Polyoxyalkylenes, uses
 (anodes for lithium **battery**)
 IT Amino acids, uses
 Halogens
 Lewis acids
 Rare earth chlorides
 Sulfonic acids, uses
 Transition metal compounds
 (dopant; anodes for lithium **battery**)
 IT Primary **batteries**
 Secondary **batteries**

- (lithium; anodes for lithium **battery**)
- IT Esters, uses
Ketals
(peroxy; anodes for lithium **battery**)
- IT Crown ethers
Polybenzimidazoles
Polyquinolines
Polyquinoxalines
(thiophenes, polymers; anodes for lithium **battery**)
- IT 110-71-4 111-96-6, Diglyme **126-33-0**, Sulfolane
646-06-0, 1,3-Dioxolane 7439-93-2, Lithium, uses 7704-34-9,
Sulfur, uses
(anodes for lithium **battery**)
- IT 67-63-0, Isopropyl alcohol, uses 75-91-2, tert-Butyl hydroperoxide
78-63-7, 2,5-Dimethyl-2,5-di-(tert-butylperoxy)hexane
78-67-1, Azobisisobutyronitrile 80-15-9, Cumene
hydroperoxide 80-43-3, Dicumyl peroxide **94-36-0**,
Dibenzoyl peroxide, uses **105-74-8**, Dilauroyl peroxide
110-05-4, Di-tert-butyl peroxide 123-23-9, Succinic acid peroxide
762-12-9, Didecanoyl peroxide 927-07-1, tert-Butylperoxypivalate
2167-23-9, 2,2-Di-(tert-butylperoxy)butane 3025-88-5,
2,5-Dihydroperoxy-2,5-dimethylhexane 4511-39-1,
tert-Amylperoxybenzoate 15667-10-4, 1,1-Di-(tert-
amylperoxy)cyclohexane 16066-38-9, Di(n-propyl)peroxy dicarbonate
16111-62-9, Di(2-ethylhexyl)peroxy dicarbonate 19910-65-7,
Di(sec-butyl)peroxy dicarbonate 24937-05-1, Poly(ethyleneadipate)
24938-43-0, Poly(β -propiolactone) 24969-06-0,
Polyepichlorohydrin 25190-62-9, Poly(p-phenylene) 25233-30-1,
Polyaniline 25233-30-1D, Polyaniline, sulfonated 25233-34-5,
Polythiophene 25233-34-5D, Polythiophene, derivs. 25322-68-3,
Peo 25322-69-4, Polypropylene oxide 25667-11-2,
Poly(ethylenesuccinate) 25721-76-0, Polyethylene glycol
dimethacrylate 25852-49-7, Polypropylene glycol
dimethacrylate 26570-48-9, Poly(ethylene glycol
diacrylate) 26748-47-0, α -Cumylperoxyneodecanoate
34099-48-4, Peroxydicarbonate 52496-08-9, Poly(
propyleneglycoldiacrylate) 55794-20-2, Ethyl
3,3-di-(tert-butylperoxy)butyrate 95732-35-7 97332-10-0,
Poly(N-propylaziridine) 139096-57-4, Isoquinoline homopolymer
172973-34-1
(anodes for lithium **battery**)
- IT 865-44-1, Iodine trichloride 1493-13-6, Triflic acid 7446-11-9,
Sulfur trioxide, uses 7550-45-0, Titanium chloride (TiCl₄) (T-4)-,
uses 7553-56-2, Iodine, uses 7601-90-3, Perchloric acid, uses
7637-07-2, uses 7647-01-0, Hydrochloric acid, uses 7647-19-0,
Phosphorus pentafluoride 7664-39-3, Hydrofluoric acid, uses
7664-93-9, Sulfuric acid, uses 7697-37-2, Nitric acid, uses
7705-08-0, Ferric chloride, uses 7721-01-9, Tantalum chloride

(TaCl₅) 7726-95-6, Bromine, uses 7782-44-7, Oxygen, uses 7782-50-5, Chlorine, uses 7783-68-8, Niobium fluoride nbf5 7783-70-2, Antimony pentafluoride 7783-81-5 7783-82-6 7783-93-9, Silver perchlorate 7784-36-3, Arsenic pentafluoride 7789-21-1, Fluorosulfonic acid 7789-33-5, Iodine monobromide 7790-94-5, Chlorosulfonic acid 7790-99-0, Iodine monochloride 10026-11-6 10026-12-7, Niobium chloride (NbCl₅) 10277-43-7, Lanthanum nitrate hexahydrate 10294-33-4, Boron tribromide 10294-34-5 13283-01-7 13499-05-3 13709-32-5, Bis(fluorosulfonyl)peroxide 13774-85-1 13819-84-6, Molybdenum fluoride mof5 13870-10-5, Iron chloride oxide feocl 13873-84-2, Iodine monofluoride 14635-75-7, Nitrosyl tetrafluoroborate 14797-73-0, Perchlorate 14874-70-5, Tetrafluoroborate 16871-80-0, Nitrosyl hexachloroantimonate 16887-00-6, Chloride, uses 16919-18-9, Hexafluorophosphate 16941-92-7, Hexachloroiridic acid 16973-45-8, Hexafluoroarsenate 17111-95-4 17856-92-7 20461-54-5, Iodide, uses 24959-67-9, Bromide, uses 25321-43-1, Octylbenzenesulfonic acid 27176-87-0, Dodecylbenzene sulfonic acid

(dopant; anodes for lithium **battery**)

IT 540-63-6, 1,2-Ethanedithiol 1072-71-5, 2,5-Dimercapto-1,3,4-thiadiazole 2001-93-6, 2,4-Dimercaptopyrimidine 2150-02-9, Bis(2-mercaptoethyl)ether 3570-55-6, Bis(2-mercaptoethyl)sulfide 9002-98-6 : 9002-98-6D, derivs. 37306-44-8D, Triazole, mecapto derivs 131538-50-6 135886-78-1 135886-79-2

(protective coating; anodes for lithium **battery**)

IT 7704-34-9D, Sulfur, organosulfur compd.

(protective layer; anodes for lithium **battery**)

IT 273-77-8, 1,2,3-Benzothiadiazole 612-79-3, 6,6'-Biquinoline 25013-01-8, Polypyridine 25013-01-8D, Polypyridine, derivs. 26856-35-9, Dihydrophenanthrene 27986-50-1, Poly(1,3-cyclohexadiene) 30604-81-0, Polypyrrole 30604-81-0D, Polypyrrole, derivs. 51937-67-8, Polyferrocene 71730-08-0, Polyanthraquinone 136902-52-8, 2,2'-Bipyridine homopolymer 136902-52-8D, 2,2'-Bipyridine homopolymer, derivs. 190201-51-5, Pyrimidine homopolymer 190201-57-1, 1,5-Naphthyridine homopolymer

(thiophenes, polymers; anodes for lithium **battery**)

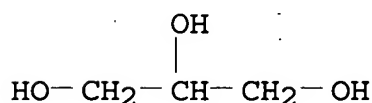
L72 ANSWER 3 OF 6 HCA COPYRIGHT 2007 ACS on STN

140:238483 **Electrolyte** for a lithium **battery**. Park, Yong-Chul; Jung, Won-Ii; Kim, Geun-Bae; Cho, Jae-Phil; Jung, Cheol-Soo (S. Korea). U.S. Pat. Appl. Publ. US 2004048163 A1 20040311, 13 pp. (English). CODEN: USXXCO. APPLICATION: US 2003-656086 20030905. PRIORITY: KR 2002-53879 20020906.

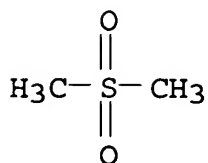
AB An **electrolyte** for a lithium **battery** includes a nonaq. org. solvent, a lithium salt, and an additive comprising (a) a sulfone-based compd. and (b) a C3-30 org. peroxide or azo-based compd. The **electrolyte** may further include a

poly(ester)(meth)acrylate or a polymer that is derived from a (polyester)polyol with at least three hydroxyl (-OH) groups, where a portion or all of the hydroxyl groups are substituted with a (meth)acrylic ester and the remaining hydroxyl groups that are not substituted with the (meth)acrylic ester are substituted with a group having no radical reactivity. The lithium battery comprising the electrolyte of the present invention has a significantly improved charge-discharge and cycle life characteristics, recovery capacity ratio at high temp., and swelling inhibition properties.

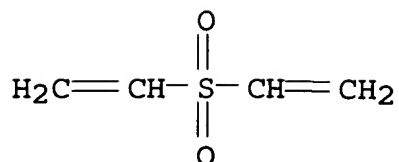
IT 56-81-5, Glycerol, uses
(electrolyte for lithium battery)
RN 56-81-5 HCA
CN 1,2,3-Propanetriol (CA INDEX NAME)



IT 67-71-0, Methyl sulfone 77-77-0, Vinyl sulfone
78-67-1, 2,2'-Azobisisobutyronitrile 94-36-0,
Benzoyl peroxide, uses 105-64-6, Diisopropyl peroxy
dicarbonate 105-74-8, Lauroyl peroxide 126-33-0,
Tetramethylene sulfone 127-63-9, Phenyl sulfone
620-32-6, Benzyl sulfone 1561-49-5,
Dicyclohexylperoxy dicarbonate 1712-87-4, m-Toluoyl
peroxide 3006-82-4, tert-Butylperoxy-2-ethyl hexanoate
14666-78-5 15520-11-3, Bis(4-tert-
butylcyclohexyl)peroxy dicarbonate 26748-41-4
32752-09-3, Isobutyl peroxide 92177-99-6,
3,3,5-Trimethylhexanoyl peroxide
(electrolyte for lithium battery)
RN 67-71-0 HCA
CN Methane, sulfonylbis- (9CI) (CA INDEX NAME)

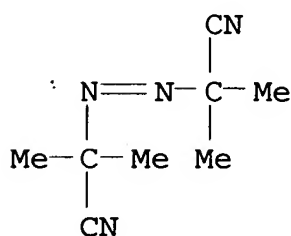


RN 77-77-0 HCA
CN Ethene, 1,1'-sulfonylbis- (9CI) (CA INDEX NAME)



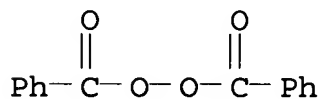
RN 78-67-1 HCA

CN Propanenitrile, 2,2'-azobis[2-methyl- (9CI) (CA INDEX NAME)



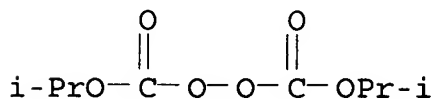
RN 94-36-0 HCA

CN Peroxide, dibenzoyl (9CI) (CA INDEX NAME)



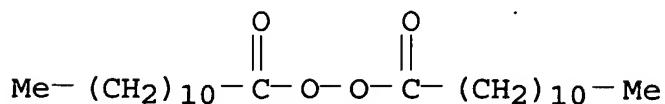
RN 105-64-6 HCA

CN Peroxydicarbonic acid, bis(1-methylethyl) ester (9CI) (CA INDEX NAME)



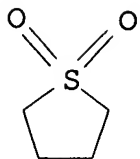
RN 105-74-8 HCA

CN Peroxide, bis(1-oxododecyl) (9CI) (CA INDEX NAME)

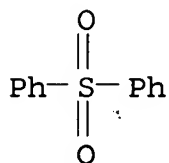


RN 126-33-0 HCA

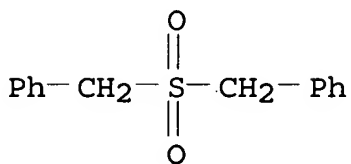
CN Thiophene, tetrahydro-, 1,1-dioxide (CA INDEX NAME)



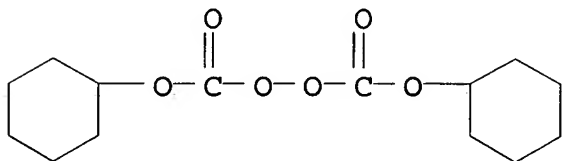
RN 127-63-9 HCA
 CN Benzene, 1,1'-sulfonylbis- (9CI) (CA INDEX NAME)



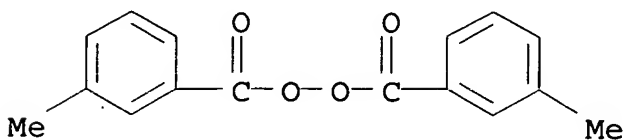
RN 620-32-6 HCA
 CN Benzene, 1,1'-[sulfonylbis(methylene)]bis- (9CI) (CA INDEX NAME)



RN 1561-49-5 HCA
 CN Peroxydicarbonic acid, dicyclohexyl ester (6CI, 8CI, 9CI) (CA INDEX NAME)

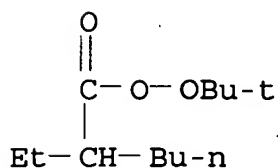


RN 1712-87-4 HCA
 CN Peroxide, bis(3-methylbenzoyl) (9CI) (CA INDEX NAME)



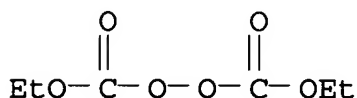
RN 3006-82-4 HCA

CN Hexaneperoxoic acid, 2-ethyl-, 1,1-dimethylethyl ester (CA INDEX NAME)



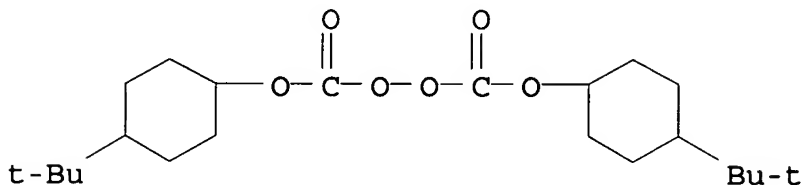
RN 14666-78-5 HCA

CN Peroxydicarbonic acid, diethyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



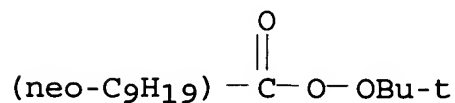
RN 15520-11-3 HCA

CN Peroxydicarbonic acid, bis[4-(1,1-dimethylethyl)cyclohexyl] ester (9CI) (CA INDEX NAME)



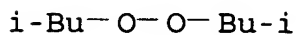
RN 26748-41-4 HCA

CN Neodecaneperoxoic acid, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



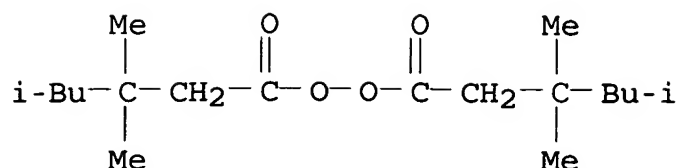
RN 32752-09-3 HCA

CN Peroxide, bis(2-methylpropyl) (CA INDEX NAME)

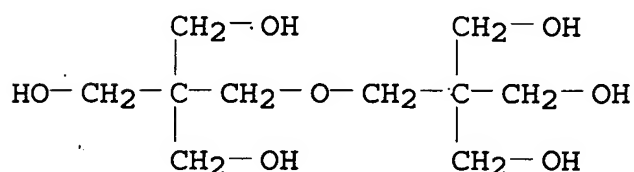


RN 92177-99-6 HCA

CN Peroxide, bis(3,3,5-trimethyl-1-oxohexyl) (9CI) (CA INDEX NAME)



- IT 126-58-9DP, Dipentaerythritol, reaction product with ϵ -caprolactone and acrylic acid and butylcarbonic acid
(electrolyte for lithium battery)
- RN 126-58-9 HCA
- CN 1,3-Propanediol, 2,2'-[oxybis(methylene)]bis[2-(hydroxymethyl)]-(9CI) (CA INDEX NAME)



- IC ICM H01M010-40
- INCL 429326000; 429329000; 429339000; 429340000
- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
- ST lithium battery electrolyte
- IT Battery electrolytes
(electrolyte for lithium battery)
- IT Aromatic hydrocarbons, uses
Carbonates, uses
Esters, uses
Ethers, uses
Ketones, uses
(electrolyte for lithium battery)
- IT Azo compounds
(electrolyte for lithium battery)
- IT Carbonaceous materials (technological products)
(electrolyte for lithium battery)
- IT Sulfones
(electrolyte for lithium battery)
- IT Polyesters, uses
(hydroxy-terminated; electrolyte for lithium battery)
- IT Secondary batteries
(lithium; electrolyte for lithium battery)
- IT Polyesters, uses

- (methacrylate; electrolyte for lithium battery)
- IT Peroxides, uses
(org., C3-30; electrolyte for lithium battery)
- IT Esters, uses
(poly-; electrolyte for lithium battery)
- IT Imides
Sulfonic acids, uses
(sulfonimides, perfluoro derivs., lithium salts;
electrolyte for lithium battery)
- IT 56-81-5, Glycerol, uses 71-43-2, Benzene, uses 96-49-1,
Ethylene carbonate 98-95-3, Nitrobenzene, uses 105-58-8, Diethyl
carbonate 108-32-7, Propylene carbonate 108-88-3, Toluene, uses
108-90-7, Chlorobenzene, uses 149-32-6, Erythritol 462-06-6,
Fluorobenzene 616-38-6, Dimethyl carbonate 623-53-0, Methylene
carbonate 623-96-1, Dipropyl carbonate 1330-20-7, Xylene, uses
4437-85-8, Butylene carbonate 7790-99-0, Iodine chloride (ICl)
7791-03-9, Lithium perchlorate 10377-51-2, Lithium iodide (LiI)
14024-11-4, Lithium tetrachloroaluminate 14283-07-9, Lithium
tetrafluoroborate 18424-17-4, Lithium hexafluoroantimonate
21324-40-3, Lithium hexafluorophosphate 27359-10-0,
Trifluorotoluene 29935-35-1, Lithium hexafluoroarsenate
33454-82-9, Lithium triflate 35363-40-7, Ethyl propyl carbonate,
uses 39300-70-4, Lithium nickel oxide 56525-42-9, Methyl propyl
carbonate, uses 90076-65-6 131651-65-5, Lithium
nonafluorobutanesulfonate 162684-16-4, Lithium manganese nickel
oxide 193215-00-8, Cobalt lithiummanganese nickel oxide
Co_{0.1}LiMn_{0.2}Ni_{0.7}O₂
(electrolyte for lithium battery)
- IT 67-71-0, Methyl sulfone 77-77-0, Vinyl sulfone
78-67-1, 2,2'-Azobisisobutyronitrile 94-36-0,
Benzoyl peroxide, uses 105-64-6, Diisopropyl peroxy
dicarbonate 105-74-8, Lauroyl peroxide 126-33-0,
Tetramethylene sulfone 127-63-9, Phenyl sulfone
620-32-6, Benzyl sulfone 1561-49-5,
Dicyclohexylperoxy dicarbonate 1712-87-4, m-Toluoyl
peroxide 3006-82-4, tert-Butylperoxy-2-ethyl hexanoate
14666-78-5 15520-11-3, Bis(4-tert-
butylcyclohexyl)peroxy dicarbonate 26748-41-4
28452-93-9, Butadiene sulfone 32752-09-3, Isobutyl
peroxide 92177-99-6, 3,3,5-Trimethylhexanoyl peroxide
(electrolyte for lithium battery)
- IT 79-10-7DP, Acrylic acid, reaction product with
dipentaerythritol and ϵ -caprolactone and butylcarbonic acid
126-58-9DP, Dipentaerythritol, reaction product with
 ϵ -caprolactone and acrylic acid and butylcarbonic
acid 502-44-3DP, ϵ -Caprolactone, reaction product with

dipentaerythritol and **acrylic** acid and butylcarbonic acid
10411-26-4DP, MonoButylcarbonate, reaction product with
dipentaerythritol and ϵ -caprolactone and **acrylic**
acid

(**electrolyte** for lithium **battery**)

L72 ANSWER 4 OF 6 HCA COPYRIGHT 2007 ACS on STN

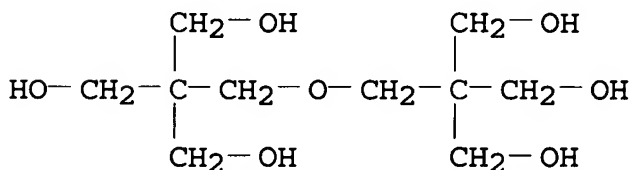
140:149224 Nonaqueous **electrolytic** solution with improved
safety for lithium **battery**. Kim, Jun-ho; Lee, Ha-young;
Choy, Sang-hoon; Kim, Ho-sung (Samsung SDI Co., Ltd., S. Korea).
U.S. Pat. Appl. Publ. US 2004029018 A1 20040212, 12 pp. (English).
CODEN: USXXCO. APPLICATION: US 2003-637554 20030811. PRIORITY: KR
2002-47510 20020812.

AB. A nonaq. **electrolytic** soln. and a lithium **battery**
employing the same include a lithium salt, an org. solvent, and a
halogenated benzene compd. The use of the nonaq.
electrolytic soln. causes formation of a polymer by
oxidative decompn. of the **electrolytic** soln. even if a
sharp voltage increase occurs due to overcharging of the
battery, leading to consumption of an overcharge current,
thus protecting the **battery**.

IT 126-58-9DP, Dipentaerythritol, deriv.
(nonaq. **electrolytic** soln. with improved safety for
lithium **battery**)

RN 126-58-9 HCA

CN 1,3-Propanediol, 2,2'-[oxybis(methylene)]bis[2-(hydroxymethyl)-
(9CI) (CA INDEX NAME)

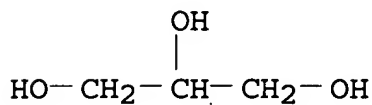


IT 56-81-5, Glycerol, uses 67-71-0, Methyl sulfone
77-77-0, Vinyl sulfone 94-36-0, Benzoylperoxide,
uses 105-64-6, Diisopropyl peroxy dicarbonate
105-74-8, Lauroyl peroxide 115-77-5,
Pentaerythritol, uses 126-33-0, Tetramethylene sulfone
126-58-9, DiPentaerythritol 127-63-9, Phenyl
sulfone 620-32-6, Benzyl sulfone 1561-49-5,
Dicyclohexyl peroxy dicarbonate 1712-87-4, m-Toluoyl
peroxide 3006-82-4, tert-Butylperoxy-2-ethylhexanoate
14666-78-5 15520-11-3, Bis(4-tert-butylcyclohexyl)
peroxydicarbonate 32752-09-3, Isobutyl peroxide
92177-99-6, 3,3,5-Trimethylhexanoylperoxide
(nonaq. **electrolytic** soln. with improved safety for

lithium battery)

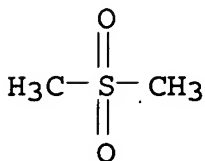
RN 56-81-5 HCA

CN 1,2,3-Propanetriol (CA INDEX NAME)



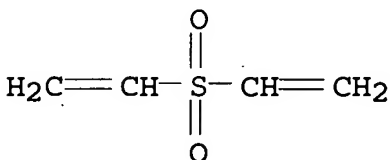
RN 67-71-0 HCA

CN Methane, sulfonylbis- (9CI) (CA INDEX NAME)



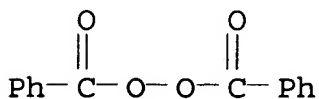
RN 77-77-0 HCA

CN Ethene, 1,1'-sulfonylbis- (9CI) (CA INDEX NAME)



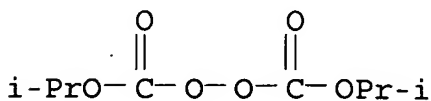
RN 94-36-0 HCA

CN Peroxide, dibenzoyl (9CI) (CA INDEX NAME)



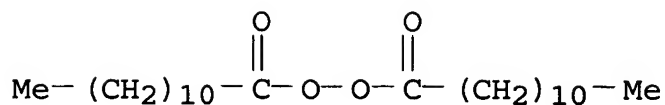
RN 105-64-6 HCA

CN Peroxydicarbonic acid, bis(1-methylethyl) ester (9CI) (CA INDEX NAME)



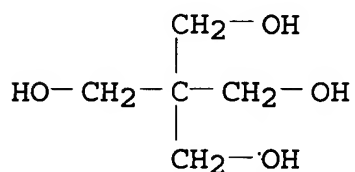
RN 105-74-8 HCA

CN Peroxide, bis(1-oxododecyl) (9CI) (CA INDEX NAME)



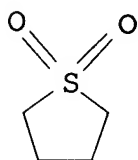
RN 115-77-5 HCA

CN 1,3-Propanediol, 2,2-bis(hydroxymethyl) - (CA INDEX NAME)



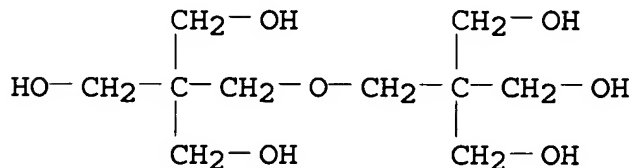
RN 126-33-0 HCA

CN Thiophene, tetrahydro-, 1,1-dioxide (CA INDEX NAME)



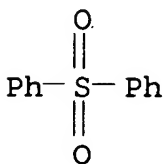
RN 126-58-9 HCA

CN 1,3-Propanediol, 2,2'-[oxybis(methylene)]bis[2-(hydroxymethyl)] - (9CI) (CA INDEX NAME)



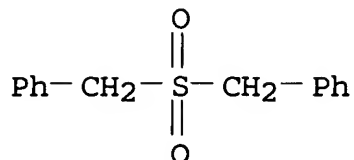
RN 127-63-9 HCA

CN Benzene, 1,1'-sulfonylbis- (9CI) (CA INDEX NAME)



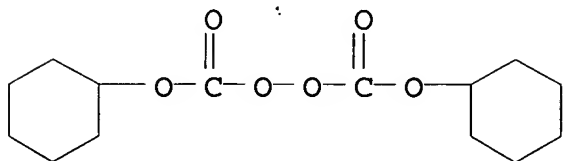
RN 620-32-6 HCA

CN Benzene, 1,1'-[sulfonylbis(methylene)]bis- (9CI) (CA INDEX NAME)



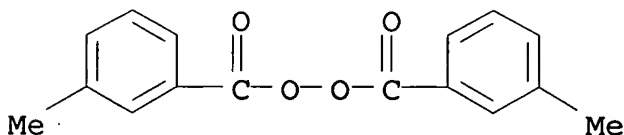
RN 1561-49-5 HCA

CN Peroxydicarbonic acid, dicyclohexyl ester (6CI, 8CI, 9CI) (CA INDEX NAME)



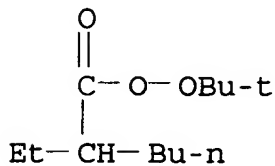
RN 1712-87-4 HCA

CN Peroxide, bis(3-methylbenzoyl) (9CI) (CA INDEX NAME)



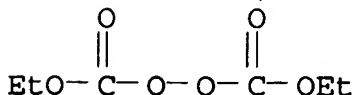
RN 3006-82-4 HCA

CN Hexaneperoxoic acid, 2-ethyl-, 1,1-dimethylethyl ester (CA INDEX NAME)

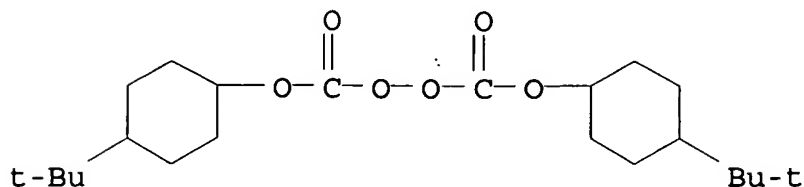


RN 14666-78-5 HCA

CN Peroxydicarbonic acid, diethyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

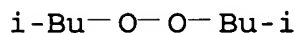


RN 15520-11-3 HCA

CN Peroxydicarbonic acid, bis[4-(1,1-dimethylethyl)cyclohexyl] ester
(9CI) (CA INDEX NAME)

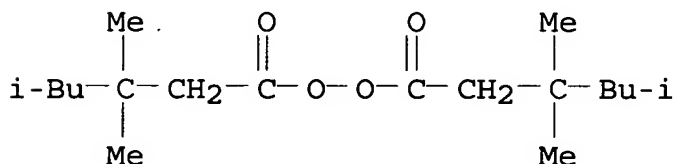
RN 32752-09-3 HCA

CN Peroxide, bis(2-methylpropyl) (CA INDEX NAME)



RN 92177-99-6 HCA

CN Peroxide, bis(3,3,5-trimethyl-1-oxohexyl) (9CI) (CA INDEX NAME)



IC ICM H01M010-40

INCL 429326000; 429200000; 429340000; 429331000; 429332000

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST lithium **battery** nonaq **electrolyte** soln improved
safety

IT Esters, uses

Ethers, uses

Hydrocarbons, uses

(C1-20; nonaq. **electrolytic** soln. with improved safety
for lithium **battery**)

IT Aromatic hydrocarbons, uses

(C5-20; nonaq. **electrolytic** soln. with improved safety
for lithium **battery**)IT Secondary **batteries**(lithium; nonaq. **electrolytic** soln. with improved
safety for lithium **battery**)IT **Battery electrolytes**(nonaq. **electrolytic** soln. with improved safety for
lithium **battery**)

- IT Polyesters, uses
(nonaq. **electrolytic** soln. with improved safety for lithium **battery**)
- IT Alcohols, uses
(**polyhydric**; nonaq. **electrolytic** soln. with improved safety for lithium **battery**)
- IT 3087-37-4, Tetrapropyltitanate
(nonaq. **electrolytic** soln. with improved safety for lithium **battery**)
- IT 502-44-3, ϵ -Caprolactone 7439-93-2D, Lithium, salt
12190-79-3, Cobalt lithium oxide colio2
(nonaq. **electrolytic** soln. with improved safety for lithium **battery**)
- IT 126-58-9DP, Dipentaerythritol, deriv.
(nonaq. **electrolytic** soln. with improved safety for lithium **battery**)
- IT 56-81-5, Glycerol, uses 67-71-0, Methyl sulfone
71-43-2D, Benzene, halogenated 77-77-0, Vinyl sulfone
94-36-0, Benzoylperoxide, uses 96-49-1, Ethylene carbonate
105-64-6, Diisopropyl peroxy dicarbonate 105-74-8,
Lauroyl peroxide 108-32-7, Propylene carbonate 115-77-5,
Pentaerythritol, uses 126-33-0, Tetramethylene sulfone
126-58-9, DiPentaerythritol 127-63-9, Phenyl
sulfone 456-55-3, Trifluoromethyl phenyl ether 462-06-6,
Fluorobenzene 620-32-6, Benzyl sulfone 623-53-0, Ethyl
methyl carbonate 1561-49-5, Dicyclohexyl peroxy
dicarbonate 1712-87-4, m-Toluoyl peroxide 2972-19-2
3006-82-4, tert-Butylperoxy-2-ethylhexanoate 9002-88-4,
Polyethylene 9003-07-0, Polypropylene 14666-78-5
15520-11-3, Bis(4-tert-butylcyclohexyl) peroxydicarbonate
21151-56-4, Benzene, 1-chloro-4-(chloromethoxy)- 21324-40-3,
Lithium hexafluorophosphate 28452-93-9, Butadiene sulfone
32752-09-3, Isobutyl peroxide 49717-97-7, 2-Propenoic
acid, 2-methyl-, ion(1-) homopolymer, uses 92177-99-6,
3,3,5-Trimethylhexanoylperoxide 651294-25-6 651294-26-7
651294-27-8
(nonaq. **electrolytic** soln. with improved safety for lithium **battery**)

L72 ANSWER 5 OF 6 HCA COPYRIGHT 2007 ACS on STN

139:294681 **Electrolyte** for lithium **battery** to reduce overcharge and improve electrochemical characteristics. Kim, Jun-Ho; Lee, Ha-Young; Choy, Sang-Hoon; Kim, Ho-Sung; Noh, Hyeong-Gon (Samsung SDI Co., Ltd., S. Korea). U.S. Pat. Appl. Publ. US 2003190529 A1 20031009, 19 pp. (English). CODEN: USXXCO. APPLICATION: US 2003-393294 20030321. PRIORITY: KR 2002-18264 20020403.

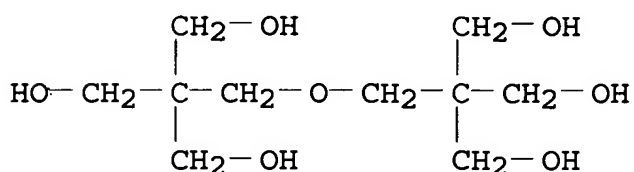
AB An **electrolyte** for a lithium **battery** includes a

nonaq. org. solvent, a lithium salt, and an additive comprising (a) a compd. represented by the formula $[(R_1)_n C_6H(6-n+m)(X)_m]$, and (b) a compd. selected from the group consisting of a sulfone-based compd., a poly(ester)(meth)acrylate, a polymer of poly(ester)(meth)acrylate, and a mixt. thereof: wherein R_1 is a C1-10 alkyl, a C 1-10 alkoxy, or a C6-10 aryl, and preferably a Me, Et, or methoxy, X is a halogen, and m and n are integers ranging from 1 to 5, where $m+n$ is less than or equal to 6.

IT 126-58-9DP, Dipentaerythritol, reaction product with ϵ -caprolactone
(electrolyte for lithium battery to reduce overcharge and improve electrochem. characteristics)

RN 126-58-9 HCA

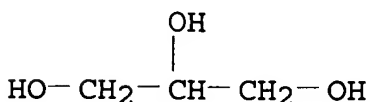
CN 1,3-Propanediol, 2,2'-[oxybis(methylene)]bis[2-(hydroxymethyl)]-(9CI) (CA INDEX NAME)



IT 56-81-5, Glycerol, uses 67-71-0, Methyl sulfone 77-77-0, Vinyl sulfone 94-36-0, Benzoyl peroxide, uses 105-64-6, Diisopropyl peroxy dicarbonate 105-74-8, Lauroyl peroxide 126-33-0, Tetramethylene sulfone 127-63-9, Phenyl sulfone 620-32-6, Benzyl sulfone 1561-49-5, Dicyclohexyl peroxy dicarbonate 1712-87-4, m-Toluoyl peroxide 3006-82-4, tert-Butylperoxy-2-ethyl-hexanoate 14666-78-5 15520-11-3, Bis(4-tert-butylcyclohexyl)peroxy dicarbonate 32752-09-3, Isobutyl peroxide 92177-99-6, 3,3,5-Trimethylhexanoyl peroxide
(electrolyte for lithium battery to reduce overcharge and improve electrochem. characteristics)

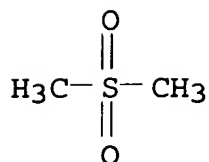
RN 56-81-5 HCA

CN 1,2,3-Propanetriol (CA INDEX NAME)



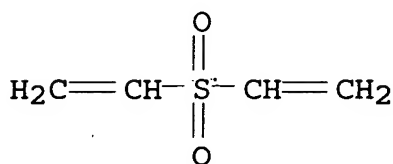
RN 67-71-0 HCA

CN Methane, sulfonylbis- (9CI) (CA INDEX NAME)



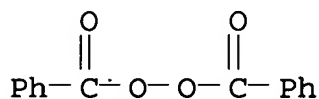
RN 77-77-0 HCA

CN Ethene, 1,1'-sulfonylbis- (9CI) (CA INDEX NAME)



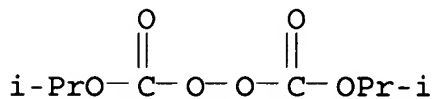
RN 94-36-0 HCA

CN Peroxide, dibenzoyl (9CI) (CA INDEX NAME)



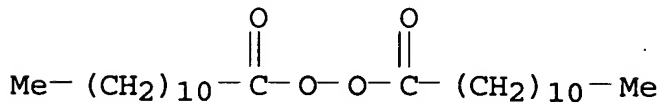
RN 105-64-6 HCA

CN Peroxydicarbonic acid, bis(1-methylethyl) ester (9CI) (CA INDEX NAME)



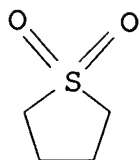
RN 105-74-8 HCA

CN Peroxide, bis(1-oxododecyl) (9CI) (CA INDEX NAME)



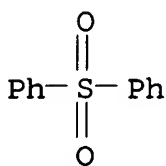
RN 126-33-0 HCA

CN Thiophene, tetrahydro-, 1,1-dioxide (CA INDEX NAME)



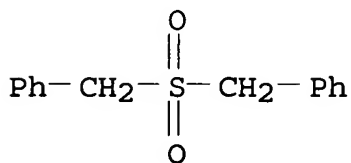
RN 127-63-9 HCA

CN Benzene, 1,1'-sulfonylbis- (9CI) (CA INDEX NAME)



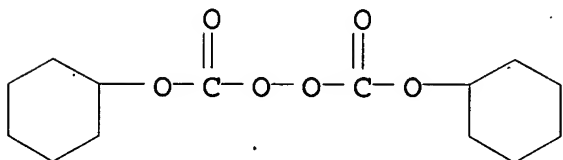
RN 620-32-6 HCA

CN Benzene, 1,1'-[sulfonylbis(methylene)]bis- (9CI) (CA INDEX NAME)



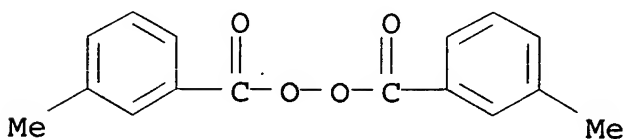
RN 1561-49-5 HCA

CN Peroxydicarbonic acid, dicyclohexyl ester (6CI, 8CI, 9CI) (CA INDEX NAME)



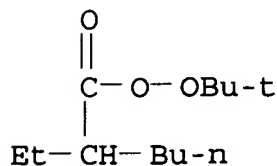
RN 1712-87-4 HCA

CN Peroxide, bis(3-methylbenzoyl) (9CI) (CA INDEX NAME)



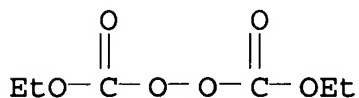
RN 3006-82-4 HCA

CN Hexaneperoxoic acid, 2-ethyl-, 1,1-dimethylethyl ester (CA INDEX NAME)



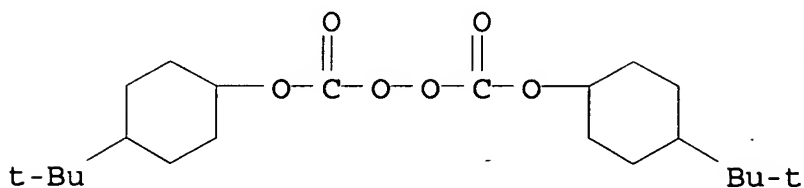
RN 14666-78-5 HCA

CN Peroxydicarbonic acid, diethyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



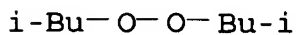
RN 15520-11-3 HCA

CN Peroxydicarbonic acid, bis[4-(1,1-dimethylethyl)cyclohexyl] ester (9CI) (CA INDEX NAME)



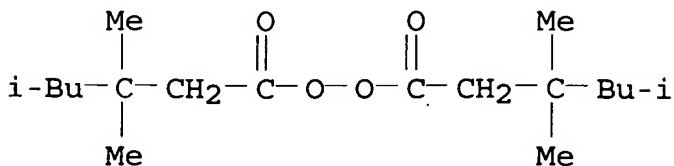
RN 32752-09-3 HCA

CN Peroxide, bis(2-methylpropyl) (CA INDEX NAME)



RN 92177-99-6 HCA

CN Peroxide, bis(3,3,5-trimethyl-1-oxohexyl) (9CI) (CA INDEX NAME)



IC ICM H01M006-18
INCL 429307000; 429309000; 429326000; 429322000; 429323000; 429330000
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST lithium **battery electrolyte** overcharge lowering
IT **Battery electrolytes**
(**electrolyte** for lithium **battery** to reduce overcharge and improve electrochem. characteristics)
IT **Secondary batteries**
(lithium; **electrolyte** for lithium **battery** to reduce overcharge and improve electrochem. characteristics)
IT Peroxides, uses
(org.; **electrolyte** for lithium **battery** to reduce overcharge and improve electrochem. characteristics)
IT Alcohols, uses
(trihydric; **electrolyte** for lithium **battery** to reduce overcharge and improve electrochem. characteristics)
IT 3087-37-4, Tetrapropyltitanate
(**electrolyte** for lithium **battery** to reduce overcharge and improve electrochem. characteristics)
IT 71-43-2, Benzene, uses 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate 108-88-3, Toluene, uses 462-06-6, Fluorobenzene 616-38-6, Dimethyl carbonate 623-53-0, Ethyl methyl carbonate 623-96-1, Dipropyl carbonate 1330-20-7, Xylene, uses 4437-85-8, Butylene carbonate 7447-41-8, Lithium chloride (LiCl), uses 7791-03-9, Lithium perchlorate 10377-51-2, Lithium iodide (LiI) 12355-58-7, Lithium aluminate (Li₅AlO₄) 14283-07-9, Lithium tetrafluoroborate 18424-17-4, Lithium hexafluoroantimonate 21324-40-3, Lithium hexafluorophosphate 27359-10-0, Trifluorotoluene 29935-35-1, Lithium hexafluoroarsenate 33454-82-9, Lithium triflate 35363-40-7, Ethyl propyl carbonate, uses 56525-42-9, Methyl propyl carbonate, uses 90076-65-6 131651-65-5, Lithium perfluorobutanesulfonate
(**electrolyte** for lithium **battery** to reduce overcharge and improve electrochem. characteristics)
IT 126-58-9DP, Dipentaerythritol, reaction product with ε-caprolactone 502-44-3DP, ε-Caprolactone, reaction product with dipentaerythritol 609772-45-4P
(**electrolyte** for lithium **battery** to reduce overcharge and improve electrochem. characteristics)
IT 56-81-5, Glycerol, uses 67-71-0, Methyl sulfone 77-77-0, Vinyl sulfone 79-10-7D, **Acrylic acid**, ω-fatty acid esters C2-C21 79-41-4D, **Methacrylic acid**, ω-fatty acid esters C2-C21 94-36-0, Benzoyl peroxide, uses 104-92-7, 4-Bromoanisole 105-64-6, Diisopropyl peroxy dicarbonate 105-74-8, Lauroyl peroxide 126-33-0, Tetramethylene sulfone 127-63-9, Phenyl sulfone 149-32-6, Erythritol 452-10-8, 2,4-Difluoroanisole

456-49-5, 3-Fluoroanisole 459-60-9, 4-Fluoroanisole
 620-32-6, Benzyl sulfone 623-12-1, 4-Chloroanisole
 1561-49-5, Dicyclohexyl peroxy dicarbonate 1712-87-4
 , m-Toluoyl peroxide 2398-37-0, 3-Bromoanisole 2845-89-8,
 3-Chloroanisole 3006-82-4, tert-Butylperoxy-2-ethyl-
 hexanoate 14666-78-5 15520-11-3,
 Bis(4-tert-butylcyclohexyl)peroxy dicarbonate 28452-93-9,
 Butadiene sulfone 32752-09-3, Isobutyl peroxide
 92177-99-6, 3,3,5-Trimethylhexanoyl peroxide 93343-10-3,
 3,5-Difluoroanisole 202925-08-4, 3-Chloro-5-fluoroanisole
 609365-67-5

(**electrolyte** for lithium **battery** to reduce
 overcharge and improve electrochem. characteristics)

L72 ANSWER 6 OF 6 HCA COPYRIGHT 2007 ACS on STN

139:182872 Polymer **electrolyte** for lithium secondary

battery. Jung, Cheol-Soo; Kim, Ki-Ho; Bong, Cul-Hwen; Yang,
 Doo-Kyung; Lee, Kyoung-Hee; Lee, Yong-Beom; Lim, Hyun-Leong;
 Yamaguchi, Takitaro; Shimizu, Ryuichi (Samsung SDI Co., Ltd., S.
 Korea). U.S. Pat. Appl. Publ. US 2003157411 A1 20030821, 14 pp.
 (English). CODEN: USXXCO. APPLICATION: US 2002-287486 20021105.
 PRIORITY: KR 2002-8303 20020216.

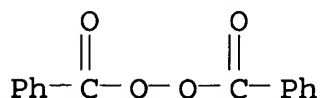
AB A solid polymer **electrolyte**, a lithium **battery**
 employing the same, and methods of forming the **electrolyte**
 and the lithium **battery** are disclosed. The polymer
electrolyte includes polyester **methacrylate** having
 a polyester **polyol** moiety having three or more hydroxide
 (-OH) groups, at least one hydroxide group being substituted by a
methacrylic ester group and at least one hydroxide group
 being substituted by a radical non-reactive group, or its polymer, a
 peroxide having 6-40 carbon atoms, and an **electrolytic**
 soln. including a lithium salt and an org. solvent.

IT 94-36-0, Benzoyl peroxide, processes 105-74-8,
 Lauroyl peroxide

(polymer **electrolyte** for lithium secondary
battery)

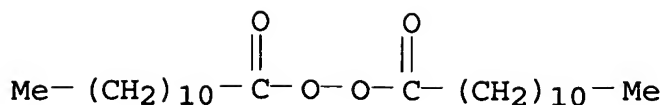
RN 94-36-0 HCA

CN Peroxide, dibenzoyl (9CI) (CA INDEX NAME)

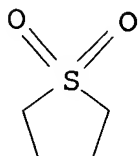


RN 105-74-8 HCA

CN Peroxide, bis(1-oxododecyl) (9CI) (CA INDEX NAME)



IT 126-33-0, Sulfolane
 (polymer **electrolyte** for lithium secondary
battery)
 RN 126-33-0 HCA
 CN Thiophene, tetrahydro-, 1,1-dioxide (CA INDEX NAME)



IC ICM H01M010-40
 ICS H01M010-04
 INCL 429317000; 429307000; 429316000; 029623100
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 Section cross-reference(s): 38
 ST polymer **electrolyte** lithium secondary **battery**
 IT Aromatic hydrocarbons, uses
 (fluoro; polymer **electrolyte** for lithium secondary
battery)
 IT Secondary **batteries**
 (lithium; polymer **electrolyte** for lithium secondary
battery)
 IT **Battery electrolytes**
 Polymer **electrolytes**
 (polymer **electrolyte** for lithium secondary
battery)
 IT Polyesters, uses
 (polymer **electrolyte** for lithium secondary
battery)
 IT 3087-37-4, Tetrapropyltitanate
 (polymer **electrolyte** for lithium secondary
battery)
 IT 94-36-0, Benzoyl peroxide, processes 105-74-8,
 Lauroyl peroxide
 (polymer **electrolyte** for lithium secondary
battery)
 IT 67-68-5, Dms0, uses 68-12-2, Dmf, uses 75-05-8, Acetonitrile,
 uses 96-47-9, 2-Methyltetrahydrofuran 96-48-0,
 γ-Butyrolactone 96-49-1, Ethylene carbonate 98-95-3,

Nitrobenzene, uses 100-47-0, Benzonitrile, uses 105-58-8,
Diethyl carbonate 108-32-7, Propylene carbonate 108-90-7,
Chlorobenzene, uses 109-99-9, Thf, uses 110-71-4,
1,2-Dimethoxyethane 111-46-6, Diethylene glycol, uses 115-10-6,
Dimethyl ether 126-33-0, Sulfolane 127-19-5,
Dimethylacetamide 542-52-9, Dibutyl carbonate 616-38-6, Dimethyl
carbonate 623-53-0, Ethyl methyl carbonate 623-96-1, Dipropyl
carbonate 646-06-0, Dioxolane 872-36-6, Vinylene carbonate
1072-47-5, 1,3-Dioxolane, 4-methyl 1300-21-6, Dichloroethane
4437-85-8, Butylene carbonate 6482-34-4, Diisopropyl carbonate
7447-41-8, Lithium chloride (LiCl), uses 7791-03-9, Lithium
perchlorate 9002-88-4, Polyethylene 9003-07-0, Polypropylene
10377-51-2, Lithium iodide (LiI) 14024-11-4, Aluminum lithium
chloride AlLiCl_4 14283-07-9, Lithium tetrafluoroborate
18424-17-4, Lithium hexafluoroantimonate 21324-40-3, Lithium
hexafluorophosphate 29935-35-1, Lithium hexafluoroarsenate
30714-78-4, Ethyl butyl carbonate 33454-82-9, Lithium triflate
51729-83-0, Methyl isopropyl carbonate 56525-42-9, Methyl propyl
carbonate, uses 90076-65-6 131651-65-5

(polymer electrolyte for lithium secondary
battery)

IT 95-52-3, 2-Fluorotoluene 352-32-9, 4-Fluorotoluene 352-70-5,
3-Fluorotoluene 462-06-6, Benzene, fluoro- 581054-59-3D, mixed
acrylic and pentanoic acid esters

(polymer electrolyte for lithium secondary
battery)

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